NOT an official Amstrad publication!!

BRITAIN'S LEADING MAGAZINE FOR THE AMSTRAD CPC 464, 664 AND 6128

No. 33 JUNE 1988 £1.25

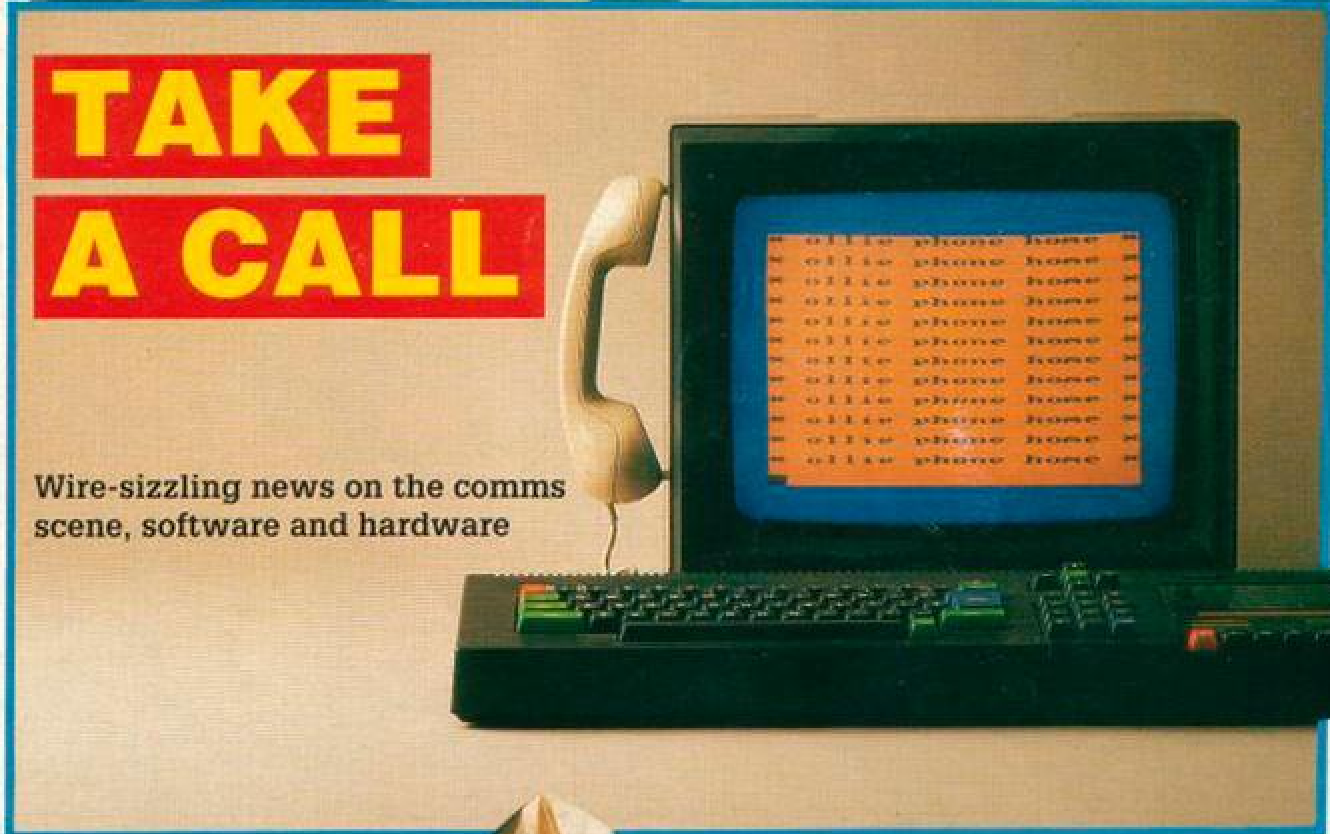
AMSTRAD ACTION

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Exciting hardware projects for building a joystick and splitter



TAKE A CALL

Wire-sizzling news on the comms scene, software and hardware



TAKE COVER

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TAKE 'EM ALL ON...
IT'S THE ONLY WAY TO LIVE!
Screen Star
Target Renegade is hugely entertaining and ample justification for a sequel ...it develops the theme and develops the game play no end on the original...Each man is four sprites ...all beautifully drawn with great comic touches. The dog is quite wonderful. Commodore User
TARGET: RENEGADE
PCW GAME OF THE WEEK
Target Renegade has the added essence of variety, which is not to be found on other games of this kind. Fear not, this is well worth the readies. PCW Game of the week
Every move you make, every step you take, they're watching you. Fight your way through the precinct – the back alleys, the car parks, fight your way through the villainous community, the skin-heads, the Beastie Boys, the bouncers. On a hot, steamy night in New York this is just the tip of the iceberg on your chilling quest to confront "MR. BIG". A spectacular arcade style brawl with many hoodlams and hellhounds to encounter – this is target Renegade – if it moves, it hurts!
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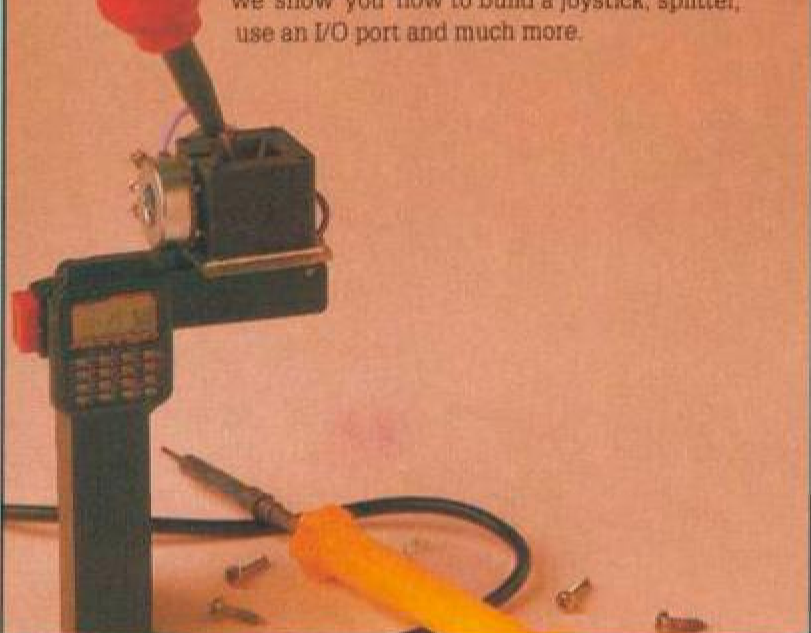
AMSTRAD ACTION JUNE 1988

FRONT END

NEWS ● LETTERS

SERIOUS SIDE

SOFTWARE ● HARDWARE ● PROGRAMMING





ACTION & ADVENTURE

GAMES ● MAPS ● PILGRIM







INTERACTION

CREATED BY YOU AND FOR YOU

WRAPPING UP

THINGS TO BUY ● BYE

New Additions

We've had a change of staff here at AA, so say a fond farewell to Richard Monteiro (no more RpM's) and an enthusiastic hello to Pat McDonald (PbM – no we don't know what the "b" stands for). Richard has taken his high powered initials and work rate to a new Future Publishing magazine – ST/Amiga Format. He's just down the corridor from us now, so you can bet he'll carry on contributing to AA.

The "new boy" is 19 year-old Pat McDonald from Frome (pronounced "froom" for all you non-west country folk). He's owned a 664 and 6128 in his time, in total three years. He'll be taking over as technical editor and resident expert on skirmishing. This – if you don't already know – is the outdoor sport where you go charging around woodland firing paint pellets at the opposing team. So don't mess with Pat or you might get a visit from the Matt Gloss Commandos – Who Paints Wins.

Pat's arrival coincides most conveniently with the first of our articles on hardware projects. Pat is very handy with a soldering iron and ignoring several nasty burns has managed to assemble joysticks, portable telephones and a fuel monitor. Ideas for projects have been flooding in, so you can be sure it will be a regular-occasional feature from now on.

Have fun with this issue and take care with those soldering irons – we wouldn't want to lose you now.

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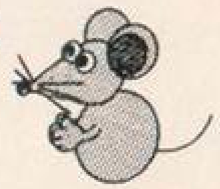
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HACKIT is available now priced only £29.99

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MicroDesign

by Hapsoft

MicroDesign is a powerful new design and artwork package for the amstrad cpc microcomputers,* allowing the user to design and print up to an entire A4 page.

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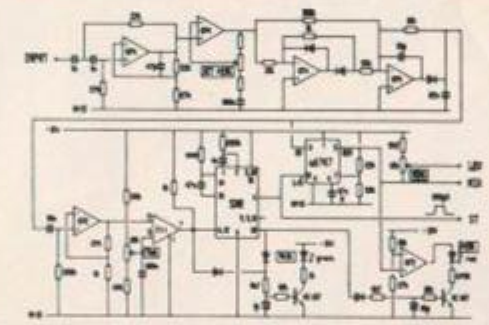
DESIGN PAGE: DESIGN OPERATIONS INCLUDE:
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- LINE, ANGLE, CIRCLE, OVAL, RECTANGLE, TRIANGLE & DIAMOND WITH FULL CONTROL OF OUTLINE AND FILL STYLES
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*for: cpc 6128
cpc 664 + 64k RAM
cpc 464 + 64k RAM + DISC DRIVE

this page produced entirely using cpc6128, MicroDesign, and a £200 printer

REACTION

The section where you get your say about AA. Libel suits, love letters, letter bombs and all other reactions are dealt with by Bob Wade – so treat him gently. The address to send your letters to is: Reaction, Amstrad Action, 4 Queen Street, Bath BA1 1EJ. Remember we can't reply personally to letters, otherwise we wouldn't have time to produce a magazine each month. Mail-order enquiries or problems should be aimed at our Somerton address. Subscription problems (not order forms) are now handled by Avon Direct Mail. You'll find both addresses on Line-Up.

Art assistance

I have an Amstrad 6128 computer with disk drive and was wondering if you could give me any information, on the availability of software that would be suitable for a handicapped girl of 12 years of age.

We are looking for simple games or some type of artistic software, that allows drawings to be produced on the screen or dumped to a DMP 2000 printer.

L J Yates
Darwen

The best art package on the market is Rainbird's Advanced Art Studio – more details from them on 01 631 5373. Alternatively there's an art package linked to a light pen from Electric Studio, 0462 420222. There's also a mouse driven art package from AMS, 0925 413501 – the mouse will also work with the Art Studio.

Simple games are a bit more of a problem because everything in the games field is relative. The best thing is to test games out in the shop if they will let you.

Musical return

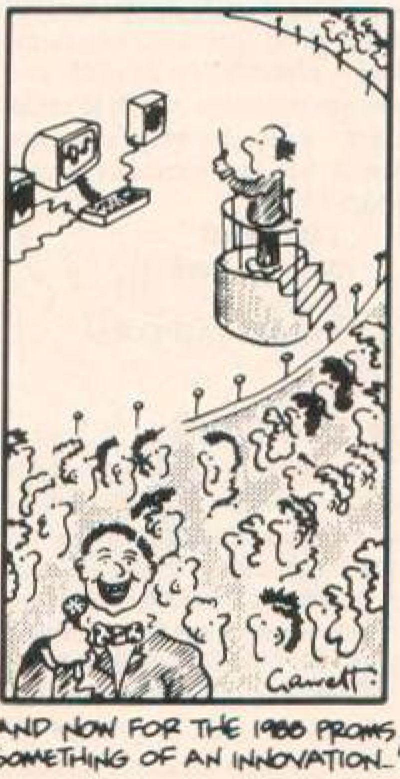
Recently purchasing a CPC 6128 has seen my return to home computing after several years absence. One of my main purposes of finally choosing an Amstrad was that it seemed to be a good system to build upon, especially in the music/composition area. Being fairly musical this is my main goal, but I could do with a little help.

Who and where is the best place to look for any musical addons and relevant software (ie: midi keyboards etc)?

I have already written to Rob Baxter in Manchester who has been composing with Rainbird's *Advanced Music System* for some time, but I would appreciate any other help from yourself or other musically motivated AA readers.

Dave Constable
Havant

Over to our music correspondent... There are three main suppliers of music/midi boxes for the Amstrad. Ram electronics (0252 850085) produce the Ram Music Machine for around £50. This allows connection to Midi and includes a sampler. DHCP Electronics (0440 61207) produce a Midi interface for £65 and various software packages, two of which are reviewed in this issue. Finally, if you want to splash out EMR (0702 335747) produce the Miditrack Performer for £130. This is a Midi interface and 8 track sequencer rolled into one package.



"AND NOW FOR THE 1988 PROMS, SOMETHING OF AN INNOVATION."

C-ing red

I have owned an Amstrad CPC 6128 computer since August of last year. I purchased the machine because I felt it offered me the best value for my hard earned money. The main reason I decided to get a computer was to learn the C programming language and, later, some Cobol and assembly language.

Playing games was not the reason I bought my 6128, although I do enjoy them now and again. I do not buy games very often for several reasons.

1) In Dublin, a disk based game will cost you IR19 to IR20, depending on where you buy. (UK £14.95 price bracket). I feel this is not very good value for money. I have no time or interest in cassette software. Why do we not have budget disk software?

2) Original software is hard to find. At the end of the day, how many "new" games are released? Most games released are just a variation on a theme. Software houses seem content to churn out the same old stuff. Why not – if people buy it, and it makes them money...

3) Why do game designers make some of them so hard? I'm all in favour of making games difficult, so the appeal lasts longer and you get better value for money, but why not give you a chance to select the difficulty level? Any programmer who wants to see what I mean should get a copy of *Match Day II*. That's how all games should be programmed.

4) Arcade conversion. Hmmm. Some work very well, but others are a big disappointment and a waste of money. Playing a game on an arcade machine, fitted with hydraulic rams, stereo sound, multiple screens, and complex graphics is all very well, but how much of that can be transferred to an 8-bit home computer? Film tie-ins put me to sleep!

I suspect I am not the only person with these points of view, but a solution is not so simple.

Software houses will produce what they think will sell. So, if owners continue to buy the unoriginal rubbish which lands on the "new release" stands, that's what the companies will produce. Arcade conversions will continue, simply because people buy them.

You and I, the computer users, are the people who will ultimately dictate the future for games software, because we are the software buying public. If we don't buy the next re-hashes of present titles, then software companies may sit up and take notice.

Cathal Gantly
Dublin

The big switch-off

Frequent disconnection of external ROMs, without which some programs refuse to run, is a bore and probably causes undue wear and tear to the connectors. *Utopia* with its ROMON and ROMOFF commands has the desired effect for many programs, but CPM based programs, while loading, seem to cancel the *Utopia* instructions. These include Siren's *Discology* and Infogrames' *Bridge*. In these cases the only recourse is to physically heave out the external ROMs.

May I therefore appeal through your columns (as they say in The Times) for some enterprising company to produce some sort of switch, either mechanical or elec-

tronic, to provide instant and easy disconnection/reconnection of external ROMS.

J R Hawkins
Stevenage

The Rombo romboard, available from Rombo Productions (0506 39046) has a set of built in switches to overcome the problem. Each rom socket can then be switched out (when the machine is off). It costs £34.95.

Spot the house

I have just received a back issue of Amstrad Action (issue 7) and was amazed to find on page 25 a picture of "Lancrigg House".

Is this the building on the side of "Helm Crag" at Grasmere in Cumbria?

Is this the building that is now a vegetarian hotel, run by Robert and Janet Whittington, non other than my Uncle and Aunt?

Are some of the authors of this great magazine vegetarian?

Has someone actually been there, or is the picture copied off the advert?

Is it the same building, or have I just made a complete fool of my self?!!

Stuart Whittington
Whitehaven

Brian Larkman did the review of the AMX mouse colour software in which the picture appeared. A quick enquiry to him reveals that it is indeed the same building. Brian apparently visits there occasionally and the picture was done from sketches, memory and an old Victorian photograph of the house.

Hamming it up

If your correspondent Wm Fairbairn would like to send me two blank disks and return postage, I will be happy to send him as much public-domain amateur radio material as I have, along with some addresses for more, both PD and commercial. RTTY is readily available and slow-scan is in the pipeline!

Disks: in addition to Mimic, Zip-Disc (blue case) is also bad news and should be avoided. Amsoft and Maxell can be obtained for £20 (in tens) inclusive of VAT/P&P. They are also, in the long run, the better value for money. The firm Zonefour are advertising Amsoft/Maxell at this price, but always send unbranded (Mimic) disks in the hope that you will not notice/care. It took me well over a month to get what I had ordered from them, and I am still out of pocket for the cost of sending the rubbish back to them!

Duncan Ball's ASR-33 Teletype was specifically designed to interface with early mainframe computers and as such could be interfaced to an Amstrad. However, I am afraid that such interfacing would probably cost as much as a modern dot-matrix printer to implement, would be very slow and would have an extremely limited character-set.

J M Dunnett
5 Queens Road
Wellington
Somerset TA21 9AW

Seriously useful

I have just been reading through the Christmas edition of AA again. After reading Jonathan Hall's letter about computer software, I feel that I must write to express my opinions about games software and software in general.

At this moment I have only one game for my 6128, *Tomahawk* by Digital Integration. This is not the only game I have had for my computer, but it is the only one that I have now.

I did have a 464, for which I bought many games, mainly budget, but some full price ones also. Very few of these games did I play more than once, even original and well recommended ones. I think this is because very few games have any lasting interest. Not because they are bad pieces of software but because they are only games. Any game can only have a number of possible outcomes and possibilities. *Tomahawk* is the only one that has had any lasting appeal with me.

This brings me on to my second point – "serious software". I think this type of software should be renamed "useful software". Why? Because I find that I get most enjoyment from it.

I own three pieces of serious/useful software. Rainbird's *Advanced Art Studio*, Arnor's *Protext* and AMS's *Stop Press*. I use all of them to produce a small local newsletter every other month. Even though I have this serious use for them, I use them a lot of the time for my own enjoyment.

I may spend several hours creating something on one of them (*Stop Press* mainly), and just turn the computer off at the end of the session, without actually doing anything. I could never spend this sort of time playing a game, however good.

All I am saying is that good serious software can, and is fun as well as useful.

Philip Stoddart
Horsham



"SOMETHING WRONG HERE ... "

Go 6128

I am writing concerning Gavin Manning's letter in the April issue of this year. He suggested a "Go 6128" command, and you said that it would be too hard to implement, if you based it on 16 bit chips. I agree with you there, but if you consider the price of a CPC, the majority is taken up by monitor, disk drive/tape deck and keyboard unit. The chips only take up a fraction of the cost – under a £100. If you put the CPC's chips inside the 68000 machine and put a "Go 6128" command in the ROM , you could go into CPC mode, and switching off would return you to the 68000's command mode.

It would only add another £50 to the price, which I would be willing to pay. Remember the keyboard, 3" disk drive and monitor are already there, and a tape port for 464 users. NO DISSATISFIED CUSTOMERS!, to quote Mr Manning.

David Chew
Co Dublin

Compatible impossible

1) How do I get my Amstrad CPC 6128 compatible with an IBM PC (or PC/XT)? I know my 6128 is powerful but software for PC's is brilliant.

Ali Q
Woking

Unfortunately there is no way to make a 6128 compatible with PC software. PC software may be brilliant but so is CPC software and it's much cheaper too.

Killer hamster

After many alone hours among my software I still cannot understand the word "Schneider". What is it – a kitchen, a dog or a killer hamster?

Mark Watson
Dewsbury

Sorry to disappoint you but Schneider is the name of the company who used to distribute Amstrad machines in Germany. Hence they were called Schneiders over there. Personally I don't think "Schneider Action" has quite the same ring to it. Great name for a hamster though.

Let's communicate

As it seems to be the season to suggest subjects for discussion in your esteemed (grovel) publication, here is my contribution – comms! (and the same to you I hear you cry).

Now, you might say that this subject gets enough coverage every month in various publications not to warrant comment. However, I shall recount my recent experience which, while specific to PC compatibles, affects anyone consid-

ering getting into communications.

Recently, I was set a problem which, at the time, seemed simple; find software which could be set up to allow the control of a PC1512 by a remote PPC640. So, always game for a challenge, I had a go.

My first line of attack was, of course, software. After much investigation, instruction and leaflet reading, and asking around, I discovered that just about every software manufacturer will quite cheerfully state that it is possible to set up bulletin boards using their product. However, only one or two actually gave a hint about how to even attempt such a task – congratulations to Datatalk on this score.

Secondly, I tried investigating hardware. Once again, after reading copious amounts of material, I noticed that every auto answer modem manufacturer seemed happy to extol the virtues of their product, then promptly instructed me to refer to software packages.

Finally, after spending a few happy hours banging my head against a lamp post, I tried contacting a few sysops (geniuses who have managed to set systems up) – surely they would be able to help me. You guessed it – no chance. After dialling into a few bulletin boards, I came to realise that most were semi-closed clubs, some even requiring a subscription before being able to get past the main menus.

After all my investigations, and talking to a couple of local systems operators, I came to the conclusion that the only way to get anywhere was to sit down and write my own software.

Now, I know that many areas of computing, including comms, can be a minefield, but must we be asked to wear blindfolds and walk zig-zag? Why do those who have set up systems seem reluctant to share information?

In particular, it seems such a waste of the CPC's power that no-one has written RSX based programs to allow the easy setting up of BB's. We CPC users are privileged to own a computer which allows extra Basic commands to be added to our machines, yet it seems that as far as setting up my own BB goes, I would be better off getting rid of my CPC and purchasing a BBC (excuse me while I wash my mouth out with soap and water). Either that or splash out many hundreds of notes on a PC compatible. Until this experience I had been thinking of spending upwards of £250 on modem, interface and software. However, until things change drastically, I don't think I will bother as it's not worth the hassle.

I for one would like to hear from other users, whatever their chosen machine, who have attempted such a task and then would also like to hear what they have experienced or how they solved them. I would also like to hear what excuses the software manufacturers have for not coming up with the goods. Oh, and er, what excuses can YOU give for not having a regular comms page? Hmm – should be quite an eye opener.

Phillip Davis
Hull

I'm not giving any excuses, just a few realities about comms. They remain a minority interest which we try to cater for from time to time (see elsewhere in this issue). However, until the comms industry gets its act sorted out it will remain a minority pursuit and no amount of editorial coverage will change that. I quite agree that that is a terrible waste of what could be a very interesting and rewarding side of computing.

Compilation king

April edition of *AA* just received and, as usual, a superb mix of the serious and the flippant, and well ahead of all opposition in presenting a good "all-round" magazine. There are whole areas that I have no interest in, and never read, but with so much variety in each edition, I never feel cheated, or given short measure. For my money you've got it just right.

Now to nit-pick ever so slightly. I respect your views on not reviewing games compilations, but for someone like myself, where games are only a peripheral interest, these re-hashes are great value. Although I would probably never be tempted to splash out on a new, full priced game, I could be tempted by a collection. So please, just a half page recap, with a list of contents, original AA ratings and a value for money indication. I'm sure that there's quite a few casual games players who would be interested.

Finally, I've never seen a poke to make my king invincible in *Masterchess*. Any chance?

Jim Palmer
Bournemouth

We do carry news of compilations in Amscene, with information on what's on them. The main problems are still the fact that compilations tend to come out all at the same time – to exploit Christmas etc, and that people don't generally want to read much about "old" games.



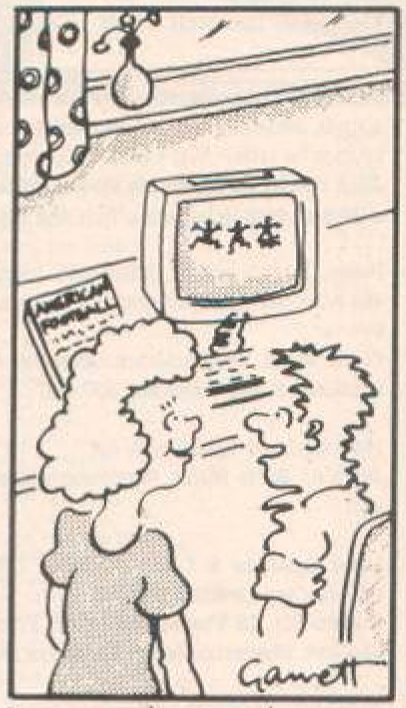
'A POKE HERE FOR MASTERCHESS – MAKES ALL THE PIECES INVINCIBLE'

Search for the Superbowl

When are we going to see a half-decent American football simulation for the Amstrad CPC machines? I write this letter after returning home from an evening spent playing the amazing *Fourth and Inches* by Accolade on my friend's computer.

The first gridiron game released for the Amstrad was the originally titled *American Football* by APS. Although it now appears dated and is very limited (it has been released as a budget title) this is still the best American football game around. Next came the *Superbowl* fiasco. Ocean advertised it frequently, keeping my spirits up, but it never actually appeared.

Since then we've seen an absolutely appalling conversion of *GFL Championship Football* by Activision. How play testing (if it exists) can allow through a game in which a continuous tone begins after points are scored, in addition to numerous other bugs, puzzles me. I was sent another copy before I eventually got my refund. The budget title *Gridiron*, by the inappropriately named Top Ten company,just doesn't bear mentioning. The first time I loaded it I won every game, including the Superbowl, by such scores as 63-0.



'THE GAME'S FINE – I'M JUST NOT HAPPY WITH THE CHEERLEADERS'

Other machines have seen *Touchdown*, *On-Field Football* and the excellent *Super Sunday* by Nexus. No luck for the Amstrad owners. A telephone call to Accolade/US Gold on the subject of *Fourth and Inches* resulted in further disappointment. "Perhaps later this year" was the vague reply.

So please software houses, let's see some action on the gridiron front. Surely the demand is there for one quality simulation.

Steven Knapper
Stoke-on-Trent

I'm a keen American football fan myself and also long for a decent simulation. I think the main problem is finding someone who actually knows the sport well and can program competently too. Otherwise you get reasonably well programmed games from someone who knows nothing about the game, leading to inaccuracies, or a badly programmed game from someone whose heart was in the right place but technical ability let them down. So I add my voice to the call for a simulation or strategy game that really gives the feel and excitement of the real thing.

Helpline

Where eager Amstrad experts volunteer aid to fellow readers having problems

If you too feel helpful, just send us your name, address, phone number (say so if you don't want it to be printed) and subject on which you want to help. Please write on a postcard or the back of a stuck-down envelope to simplify administration here in the office. Send to: **Helpline, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ.** If you are asking for help, make direct contact with the appropriate Helpliner - don't pester your usually-patient (but pressed) editor. By post, you must include a self-addressed, stamped envelope for the reply - otherwise you won't get one. And if you telephone, stick to socially acceptable hours!

Reminders: Anyone invloved in piracy is not welcome on this page and if problems arise they will be removed. Keep it legal, it's in everyones interest. A plea to helpliners – if you do receive SAE's from people, please return them with some acknowledgement. Lastly a reminder that if you want to come off the Helpline you should write and say so.

464 Basic programming (most aspects except sound), adapting routines for personel use, will type listings for tape + 50p + SAE + 50p postage.
John Girvin, 25 Moorgate Street, Belfast, BT5 5BZ. ☎ Belfast 658939 between 7pm and 10pm.

Pokes, French games, Masterfile. (penpals wanted 464 with disk drive, interested in hacking games and tips etc.)
Geoff Smith, 60 Blackburn Crescent, Chapeltown, Sheffield, South Yorkshire, S30 4EG

Lots of games, too many to list
Joe'n'Al, Butts Mead, Northwood, Middlesex, HA6 2TL

Laser Basic dir & Compiler, Basic, DMP 2000, AA type-ins, tape loading problems.
Adrian Sill, 19 Sherwoood Drive, Five Lane Ends, Skellow, Doncaster, South Yorkshire, DN6 8NY

Pulsator, Gauntlet, Green Beret, Hydrofool, Arkanoid, Grand Prix Simulator, Pro Ski Simulator, Leaderboard, Tempest, Barbarian.
Gregor McBride, 17 Turteum Road, Crieff, Perthshire, PH7 3QF

Gryzor, Elite, Jack the Nipper II, Head over Heels, Batman, Mag Max, Fourth Protocol, Flying Shark, Tai Pan, Starglider, Driller, Platoon, Road Runner, Indiana Jones, The Eidolon, They Stole a Million, Star Wars, Barbarian, Prohibition, Gauntlet, Wizball, The Great Escape, Renegade, Aliens, Ikari Warriers.
Richard Jennings, Drws-y-coed, Panteg Road, Aberafron, Dyfed, SA4 60EW

Ikari Warriors, Football Manager, Stockmarket, Theatre Europe, Into the Eagles Nest, Outrun, Slap Shot, Short Circuit, Arkanoid, Ace of Aces, Ninja, Xcel, Big League Soccer.
Richard Ruane, 72 Falkland Road, Catterick Garrison, N. Yorkshire

Ghostbusters, Renegade, Xevious, Indina Jones, Ghosts and Goblins, Chronos, Living Daylights, Kung Fu Master, Exolon, Bomb Jack, Brian Blood Axe, Starstrike II, Bruce Lee and many more.
Matthew Skinner, 67, Kings Ash Road, Paignton, S.Devon

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Gavin Brandon, 132 Hillside, Dalkey, Co. Dublin, Ireland

Heroes of Kahn, Imagination, Spy Trek Adventure, D.a.a, Sea Base Delta, Wild Bunch, CPM, MSDOS, Basic.
D. Williams, 3 Grovelands Road, St Pauls Way, Kent, BR5 3EQ ☎ 01 300 1013

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Daniel Gibson, 44 Grosvenor Place, Jesmond, Newcastle upon Tyne, NE22 2RD ☎ 091 2810269

Printer service, various size screen dumps, Stop Press pages, game screens, listings, letters and documents etc, also artwork service. SAE for details.
Andrew Kemp, 15 Llanwern Road, Maesycoed, Pontypridd, Mid Glamorgan, CF37 1EQ

Elite, Yie Ar Kung Fu, Commando, E.Freddy, Space Harrier, Football Manager.
M.Levy, "Brecon", Woodside Lane, Finchley, London, NI2 8RG. ☎ (01) 445 0220 (weekends (01) 209 1006)

I am able to give full help with RSX's (bar commands). Send £1 and a large SAE for the photocopied sheets. Also able to give some help on Basic.
Shabaz Yousaf, 137 The Crescent, Slough Berkshire, SL1 2LF

Gauntlet, Aliens, Hacker 1, Green Beret, Short Circuit, Lightforce, Knight-tyme, Zub, Xcel, Bomb Jack 1, Apprentice, Thrust, Saboteur, 3D Boxing (Amsoft), Kane, Oh Mummy. Good at programs that give lists of things, eg telephone numbers, games, stocks. - 464
Abdul ("Billy") Qureshi, 16 Truggers, Handcross, Haywards Heath, W Sussex, RH17 6DQ ☎ (0444) 40 0548

Amaurote, Kane, Hyperbowl, Turbo Esprit, Speed King, Starstrike II, Yie-ar Kung Fu, Thrust 1, Tomahawk, Druid, Batman, Knight Tyme, Thanatos, Harvey Headbanger, Paperboy, Gauntlet, Arkanoid, Lightforce, Trailblazer, F1 simulator, Renegade
Jason Burns, 212 Victoria Rd, Higher St Budeaux, Plymouth, PL5 2DH

Basic, machine-code, hardware, programming roms. Peripherals available for use: printers, video digitizers, rom blowers, Multifaces
Mark Spencer, SIG Enterprises, room 2, 101 Oxspring Bank, Sheffield, S5 8NR ☎ (0742) 31 4053

Protext, Prospell, Utopia, roms, Basic, DMP 2000 printer; can supply screendumps of games or programs
Andrew Perry, 5 Uplowman Road, Tiverton, Devon, EX16 4LU ☎ (0884) 25 3414

Mini Office 2, Melbourne Draw, Music System, tape-to-tape, DMP 2000, Grand Prix Simulator, Chronos, Starglider, Yie-ar Kung Fu, Colony, Destructo, Radzone, Kane, Dynamite Dan, Rocky Horror Show - and many other games, software companies' addresses and general help on the 464
Helen Saunders, 14 Elm Ave, Beeston, Nottingham, NG90 1BU

Message from Andromeda, Terra Cognita, Thrust, Mr Freeze, Spellbound
Darren Jackson, 85 Fitzherbert St, Warrington, Cheshire, WA2 7PN

Feud, Jack the Nipper, Knight Tyme, Message from Andromeda, Revolution, Street Hawk, Saboteur, Starstrike II, Thrust II, 180
Paul Selvidge, 15 Whitcombe Close, Lordswood, Chatham, Kent, ME5 8RL ☎ (0634) 62978 except Sundays

Batman, Druid (use map locations from AA maps), Head over Heels, Batman, Druid, Ralli II, Green Beret, DT's Decathlon, Lightforce, Yie-ar Kung Fu, Who Dares Wins II, Bruce Lee, Ghosts'n'Goblins, Chuckie Egg, Chronos, Moon Cresta, Mindshadow
Darren Roofe, Cathryn Wheel House, 43 High Street, Manea, Cambs, PE15 0JD

Get Dexter, Robin Hood, Trailblazer, Fighting Warrior, Druid, Knight Lore, Thrust, Avenger, Bruce Lee, Match Point, Starglider, Green Beret, Sorcery, Revolution, Thing on a Spring, Starstrike II, Xeno, Pingpong, The Apprentice, Finders Keepers, Pipeline II, Shockway Rider, Locomotion, Zub, Knight Tyme, Radzone, Everyone's a Wally
John Lawless jnr, 75 Leix Rd, Cabra, Dublin 7

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AMSCENE

Monthly update on what's new on the CPC scene

PCW Innovation

For the musically minded out there who are in to all those MIDI gadgets, you might be interested in an extra exhibition at the PCW show on September 14-18. The section in question will be called the "MIDI soundscape". Montbuild Ltd, who organise the event, say they are giving it a substantial promotion.

What might you see there? Well, everything from complete integrated Midi systems: through individual products like keyboards, drum machines, effect boxes etc, down to the the actual computer hardware and software which can be used to drive the system. For more information on the show contact Jacqueline Sweetman on 01 636 3205.

Printers galore

Accodata have released their economy printer mufflers. These useful objects are large, clear boxes in which to install your printer to reduce noise levels. There are two basic types, one for standard 80 column printers and the other for wide carriage. Check them out – and whether your printer will fit inside or not – with Action Computer Supplies, 0800 333333.



Amstrad's latest printer, the LQ5000 has also arrived. This is a 24 pin wide carriage printer, for those out there who like using wide stationery. It uses the rear paper loading system currently in vogue, as opposed to the DMP's front loading system. The price is £399 plus the dreaded VAT. Ultra cheap for what you get. They are available from Norbain Data Systems, 0734 755252.

Also available from Norbain is a pair of transportable printers. Both of them are ink-jet type printers and they operate off mains supplies. The only difference between the 300 and the 300W is that the latter is a wide carriage printer, with a maximum paper width of 14.8 inches: as opposed to 9.5 inches wide for the former. They are actually manufactured by Diconix and follow in the footsteps of the "immense success" of the 150. Prices are £499+ Vat for the 300 and £599 +VAT for the 300W.

And finally, for all those people with enough money to make a fair sized bonfire, Oki have released their 393C printer. Another 24 pin this, with a specification to make you weep. Action (who market it) claim a draft speed of 450 characters per second. Personality packs can be plugged in to make the machine behave to a standard. As bought it pretends to be an Epson LQ. Have I missed something? Oh yes, the price. Action Computer supplies are offering a 22% discount on RRP. Which reduces it to a paltry £1008.14. Plus Vat, of course.

Helicopter warfare

Gunship, the helicopter simulation from Microprose, will be with you in the next couple of months. It's been a long time coming, but if the other versions are anything to go by it'll be good. If you get really good at the game then you'll join the limited few that have won the Congressional Medal of Honour.



Don't push me

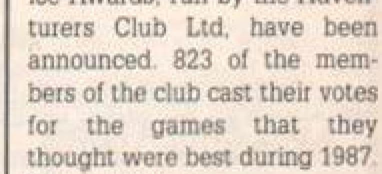
Seven of Gremlin's programmers have been pushed out of a plane in the depths of Nottingham. No they haven't been failing to meet deadlines, it's all done in the aid of charity. The Royal National Lifeboat Association is to get the proceeds from the event.



Young get Data Protection

People from the age of 11 upwards are being made aware of the Data Protection Act through the aid of BTA studycards. 30,000 of the studycards have been distributed free to schools and colleges during and follow-up material, in the form of resource packs, has been requested by many students and teachers.

The forms for registering under the Data Protection Act have also been simplified to make it less daunting to go through the registration process. If you want further information then address them to Nigel Waters, Assistant Data Protection Registrar, Springfield House, Water Lane, Wilmslow, Cheshire SK9 5AX. ☎ 0932 225526



Award winning adventures

The results of the Golden Chalice Awards, run by the Adventurers Club Ltd, have been announced. 823 of the members of the club cast their votes for the games that they thought were best during 1987. The winners are:

Golden Chalice: Gnome Ranger by Level 9 Computing
Silver Chalice: Rigel's Revenge by Mastertronic
Bronze Chalice: Knight Orc by Rainbird Software/Level 9
Honourable Mention: The Guild of Thieves by Rainbird Software

Fore

The finals of the Computer Golf Championships have just been held at the Belfry Golf Club near Birmingham. US Gold ran the competition to find the best players of their game *World Class Leaderboard* in three categories: novice, amateur and professional. The winners were Simon Stewart of Lanarkshire, Mark Hyman of London and Chris Dale from Sheffield.



Computer workstations

Elmo (UK) Ltd have just released a new computer table called the "Datadesk". It has an adjustable angle worksurface, pull out keyboard, file storage and a large CPU and printer surface. It's not exactly cheap at £120, but it does include VAT and delivery. For further information call Elmo (UK) Ltd on 01 836 6913 or write to them at 1 Russell Chambers, Covent Garden, London, WC2E 8AA.

SBS Computer Supplies have also launched a new workstation, the "Mini Office" system. It has a desk unit with shelf and drawer, computer and printer unit, filing trolley and a corner unit that links the workstation together. For a limited period SBS will be supplying a free swivel chair with each system ordered. It costs £187 and is available from SBS Computer Supplies Ltd, Unit 3, Clarks Industrial Estate, Newtown Road, Hove, East Sussex, BN3 7BA or ☎ 0273 726331.



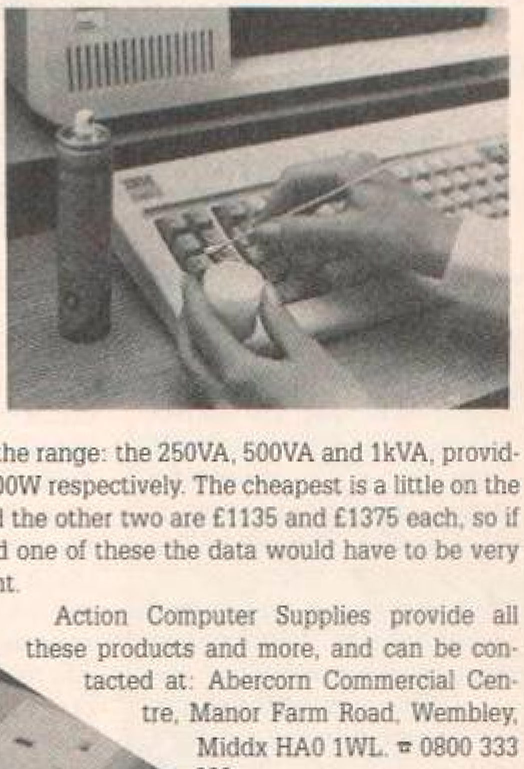
Action

Action Computer Supplies have released a wide range of new products that you may find useful for your CPC. The first is a case and keyboard cleaning kit that costs £4.85. It contains 87ml of aerosol foam cleaner, 25 cleaning buds and 20 wipes.



A wide range of labels are also available from Action. They use a special adhesive that allows them to be removed or repositioned without leaving any sticky residue behind. There are nine shapes and sizes of labels which range from the humble diskette up to large tape reels.

If you're having trouble with voltage surges, spikes or mains-borne radio frequency interference, then you may be interested in a power filter. It protects your programs and data from inopportune crashes. The cheapest is £27.90 and it provides a "clean" supply at up to 3 amps. Another model allows four sockets to be protected and the top of the range model can switch on five sockets in order, with a few seconds delay between each switch on, to protect more sensitive pieces of equipment. The four socket model costs £68 and the top of the range £149.



Have you ever been in the situation where four hours of program or data has disappeared because there's been a power cut, or the meters run out of money? Well if you have, then you might be interested in the Powerbank which gives you up to 20 minutes of emergency power. There are three models in the range: the 250VA, 500VA and 1kVA, providing up to 200W, 400W or 800W respectively. The cheapest is a little on the expensive side at £649 and the other two are £1135 and £1375 each, so if you can afford one of these the data would have to be very important.

Action Computer Supplies provide all these products and more, and can be contacted at: Abercorn Commercial Centre, Manor Farm Road, Wembley, Middx HA0 1WL. ☎ 0800 333 333



Charity software

The Race Against Time is the new title from Code Masters that has been written specifically for Sport Aid '88. The game will not be on sale from the 7th of May when it is launched on the ITV children's program Get Fresh. It's an arcade adventure by the Oliver twins and there's also a musical soundtrack of the Peter Gabriel track "Games without Frontiers".

If you're interested in taking part in the real Race Against Time on the 11th of September and are having difficulty finding entry forms, then send a large SAE to: Sport Aid 88 Information, 140 Battersea Park Road, London SW11.



Wacci changes

Wacci, the Amstrad public domain club, have undergone a change of hands and telephone number since issue 32 of *AA* hit the streets. The advert in that issue had the right address, but wrong telephone number. Steve Williams is now the man in charge of Wacci and he can be contacted at: Wacci UK, 59 The Green, Twickenham, Middx TW2 5BU or you can ring him on ☎ 01 898 1090

Smart Multiface II+

Romantic Robot are developing an improved version of the Multiface II – the II+. The price will remain the same, £39.88. Apparently the new version will do away with the manual switch, and has an internal one instead – Romantic claim they were handling a lot of returns with broken switches.



This is one of those clever black boxes that can take control away from a program while it is running. This enables you to examine, edit and backup commercial software. To actually load in software, the Multiface II+ must be present, so pirates will find this about as much use as a rubber cutlass.

The procedure is: you reset your Amstrad with the device. The Multiface will now be invisible to any software scanning for it. At the touch of a button it will burst into activity and wrest control away before the poor program knows what's hit it.

The product is still under development but according to the manufacturers should be available in "a couple of weeks", i.e. mid May. Romantic Robot can be contacted on 01 200 8870.

Wrong numbers

Please note that the correct telephone number for customer enquiries concerning Amstrad/Sinclair equipment is 0277 230222. Your use of this number will be greatly appreciated by a certain old age pensioner who has been getting lots of wrong numbers.

While we're on the subject of telephones there has been a change of number for Mirage Electronics Ltd. Their new number is 0438 740350.

Out of print

In the April issue of *AA* we mentioned the book "Assembly Language Programming for the Amstrad CPC 464, 664 and 6128" by A & D Stephenson. Unfortunately we have since discovered that it's now out of print. You may still be able to find it lurking in some dark recess of a book shop or you could try Out of Print services of Cardiff, who may be able to help find it. They will try and track a book down for you, but it may take a month to find. Call them on 0222 569488 or send an SAE for details to 17 Fairwater Grove, East Fairwater, Cardiff.

Protext tutorial

Two new tutorials for CPM+ Protext users have been released by Thompson Computers. One course covers the correct usage of the mail-merging facilities offered by the word-processor. People who have Amsdos Protext and Promerge can also benefit from this lecture.

The second covers the advanced usage of CPM+ Protext, including such subjects as printing 2 or more columns of text, two file editing and dating documents, to name but a few. Both programs are available from Thompson Computers, 8 Hyholmes, Bretton, Peterborough, PE3 8LG. Supplied on disk only, price is £15 each plus £1.50 postage and packing.

NEW RELEASES

Breakout clone

The hit 16-bit breakout type game *Impact* has just been released by Audiogenic on the CPC. There are 80 pre-designed screens of bat and ball action and another 10 redesigned by the player, using a built in screen designer. You'll get a full review next month. Price is £9.95 on cassette and £14.95 disk.



Pick of the nose

Bogies Pick is a compilation of four games that have just been released by Top Ten Software. The four games are *Herbert's Dummy Run*, *Druid's Moon*, *Stock Exchange* and *Darkwurlde*. The fours games cost £2.99 and are only available on cassette.



Hydrofoiling around

PHM Pegasus will soon be arriving in the high streets from Electronic Arts. It's a hydrofoil combat simulator that has filled 3D graphics. It costs £8.95 on tape and £14.95 on disk.

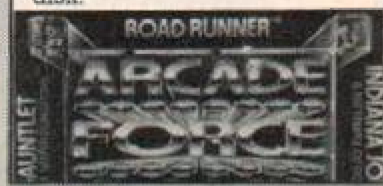


Spend a penny

The adventure game of the Jeffrey Archer novel *Not a Penny More, Not a Penny Less* has finally arrived from Domark. It's a graphical adventure in which you must recover £1 million that's been swindled from you.

US Gold

Arcade Force Four is a US Gold compilation of, not surprisingly, four games. They are: *Road Runner*, *Gauntlet* and the *Deeper Dungeons*, *Metrocross* and *Indiana Jones*. The compilation is available now and costs £9.99 on cassette and £14.99 on disk.



Hewson

Marauder is a new game from Hewson that will be in the shops by the end of June. It's a vertically scrolling shoot-em-up that will cost you £9.99 on tape and £14.99 on disk.

Also from Hewson is *Heathrow International Air Traffic Control*, an air traffic control simulation in which you have to make sure that all the aircraft get down safely and don't go bump in the sky. It costs £7.95 and is available on cassette only.

`Ocean

We are the Champions is an Ocean compilation that's out on the streets now. Games included on it are *IK+*, *Renegade*, *Rampage*, *Barbarian* and *Supersprint*. All games received fairly good reviews and as a pack are good value for money at £9.95 on tape and £14.95 on disk.

Powering up

The Power House have just launched four new games for the CPC: *Metropolis*, *Astroball*, *Scary Tales* and *TT Racing Simulator*. *Metropolis* and *Astroball* are arcade adventures, *Scary Tales* is a text adventure and *TT Racing Simulator* is a strategy/arcade game. All games will cost £1.99 on cassette only.

Soldering on

Pat McDonald presents some much requested ideas on adding bits to your CPC.

The listening mag

Over the past few months, quite a number of readers have written in with requests for a DIY hardware section and ideas to use. In response we thought it was high-time to print some projects.

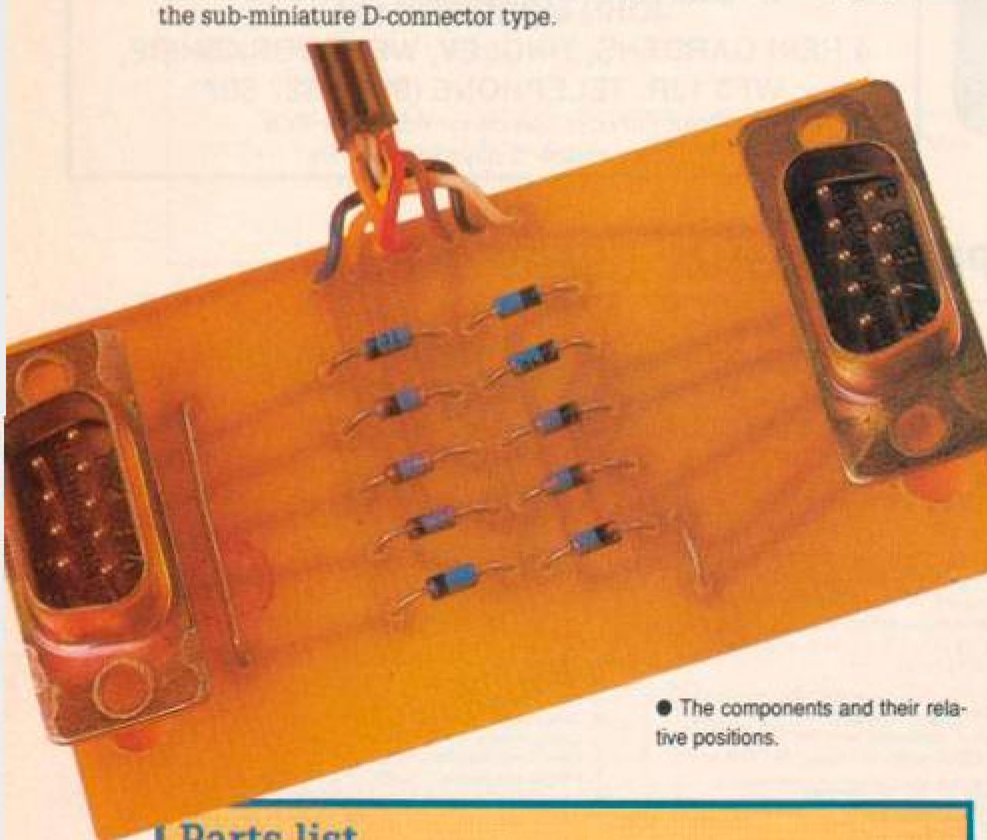
Joystick Splitter.

Geoff Shakespear has come up with a handy idea to get rid of key clashing on two player, two joystick games like *Gauntlet*. The idea is to make a black box to put inbetween the Amstrad and the joysticks.

The controls don't work properly because information can go both ways. Although this is sometimes useful – *Tobruk*, for instance, used to have a link option which used the joystick ports of two Amstrads – it's very annoying that two joysticks cannot be used properly at the same time.

The answer is to connect the joystick through some devices that permit information to travel in one direction only. These worthy little beasts are called diodes and are thankfully very cheap. One is needed for every switch, i.e (up, down, left, right and fire) per joystick.

The diodes, sockets, plugs and cable are available from various mail order suppliers if you can't find them locally. The sockets and plugs are of the sub-miniature D-connector type.



● The components and their relative positions.

Parts list

Building Code	Component Name
D1-D10	10 X 1N4148 diodes
SK1-SK2	2 X 9 Way D Socket
PL1	1 X 9 Way D Plug + Cover
Cable	1/2 Metre 7 way cable
Case	(Optional)
Printed Circuit Board	(Optional)

Construction

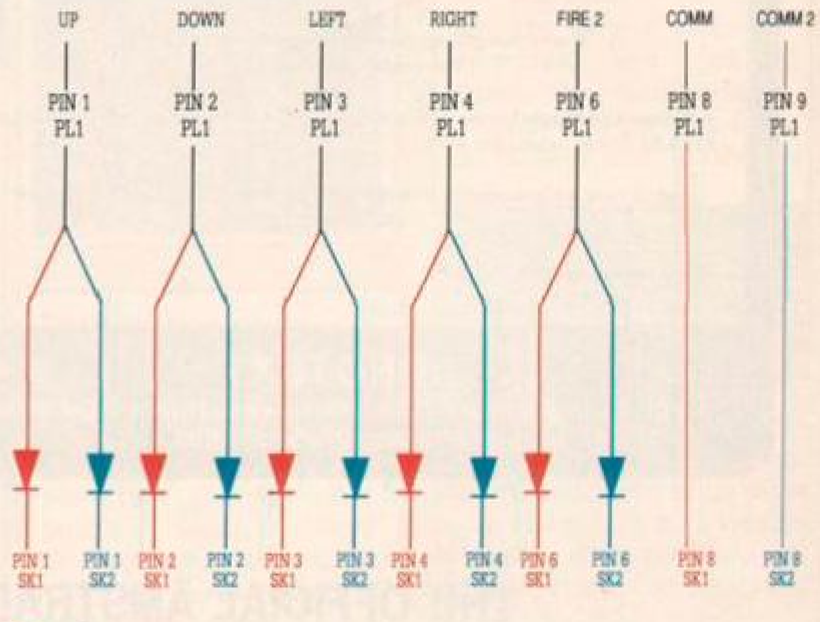
How it all goes together is really a matter of taste. If you can follow the circuit diagram and can wire it without the need for a board, fine. Perhaps you already have a joystick splitter to wire it into. If you would rather build it from scratch on the PCB, that's OK too.

The first bits you solder onto the board are the diodes. Make sure that you get them the correct way round. Check the band around one end of the diode. Compare your board with the photograph.

Now insert the sockets and solder them. The tricky bit is getting the connections from the Amstrad port right. Look at the PCB with the cable holes at the top and the components uppermost. The socket on the right is SK1, that on the left is SK2.

Going from left to right, the connections on the actual holes are; Fire2 (Blue), Right (Yellow), Left (Orange), Down (Red), Up (Brown), Common2 (Black) and Common (White).

● Schematic Connection Diagram.



Cost

Each diode costs around 4p each. The two sockets can be got for around 50p each, and the plug for about 40p. The wire varies tremendously but you would be robbed if you paid more than £2.

Incidentally, rather than pay out for a 9 pin plug you could use the cable removed from an old joystick. The only hassle with this is trying to remove the cover on the plug. You'll have to work out just which wire goes where but the accompanying illustrations should help. A multimeter would simplify things further, because it could tell you which wire goes to which pin.

Geoff Shakespear, the designer of this little widget has had a PCB made for it. He will sell both this and a custom case on a mail order basis. Prices are £3 for the board and £2 for the case, although you will have to check both with him. He doesn't have a telephone.

We don't pretend that this is the simplest modification to build for the Amstrad. However, it shouldn't cause any difficulties, if you follow the instructions given. Electronic hobbyists out there are probably yawning already. If you think you might have problems get in touch with Geoff. He can also supply a ready built interface for £6.95 which includes P&P.

Part suppliers

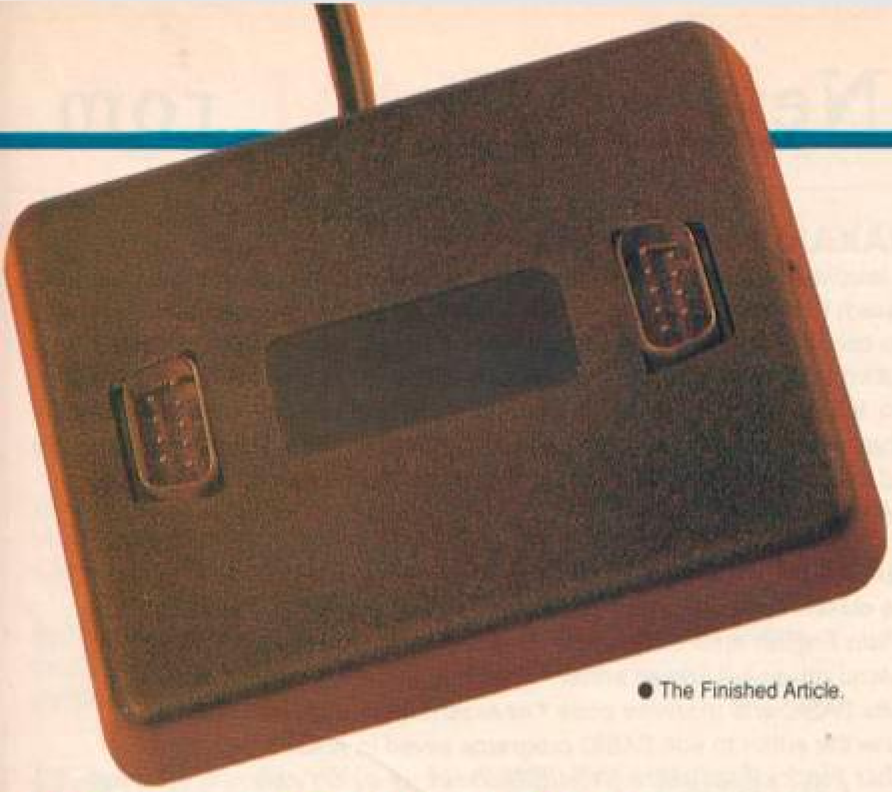
Geoff Shakespear, 34 Conifer Close, Colchester, C04 3PF.

Greenweld Electronics, 443 Millbrook Rd, Southampton S01 ☎ (0703) 772501.

Greenweld supply the skeleton joystick and a truly fascinating assortment of bargain devices and gadgets, from RAM boards to cream dispensers. They supply various catalogues.

Cirkit Electronics, Park Lane, Broxbourne, Herts EN10 7NQ ☎ (0992) 444111

Cirkit are a good supply of parts and components. Their brochure costs £1.20.



● The Finished Article.

Designer Joystick

Joysticks come in for a great deal of punishment. They suffer injuries ranging from a defective fire button up to a broken shaft or case. Wouldn't it be nice to take a broken joystick and salvage it to make a better one from the bits? **N. Barrett** from Leeds has one way of doing just that.

First, think on what you'll need. Greenweld Electronics have a skeleton joystick for sale at just £1 (plus £1 P & P). Fire buttons are available from hundreds of suppliers across the country, but Tandy do a good one for 89p. The correct title for a joystick button is "SPST momentary, push to make" type. Also look for the words "soft feel" as these are much easier on your fingers.

Watch yourself

All of the projects described need some solder work. If you know that you can't do it, either get someone who can or get a tutorial and learn. Soldering isn't dangerous in itself, but plenty of toddlers have picked up an iron by the wrong end. The author was one of them.

Although you can wire up a lead for the joystick it is much easier to use a cable from a broken one. Joystick connections are in the Amstrad manual, so take a look. It might not mean much yet, but it will.

Next comes the case. Decide just what shape you prefer. There is the hand-held Konix type, the conventional table top with suckers and the hybrid type where the stick is placed on top of a handgrip. This is the one I decided on.

If you are a woodworking genius then no doubt you can knock one up in minutes. For the majority of the readers though, here's an easier way to get something acceptable...

You know what you are looking for. Our society produces thousands of differently shaped products. Take a look around you. Look for something the right shape and size. It could be a simple lunchbox, a bookend, a radiocase, a statuette – use your imagination.

I decided to use part of an L shaped cassette case. It isn't very comfortable on its own but we'll come back to that.

Delta Joystick

Ram Electronics, ☎ (0252) 850085

For those with no taste for making a weird and wonderful joystick, Ram Electronics have released their *Delta* Joystick at just £9.99.

This is a professional joystick with six micro-switches. It is fairly comfortable to hold but is much easier to use planted firmly on a desk. As per usual the auto-fire doesn't work, but it's still a pretty good buy.

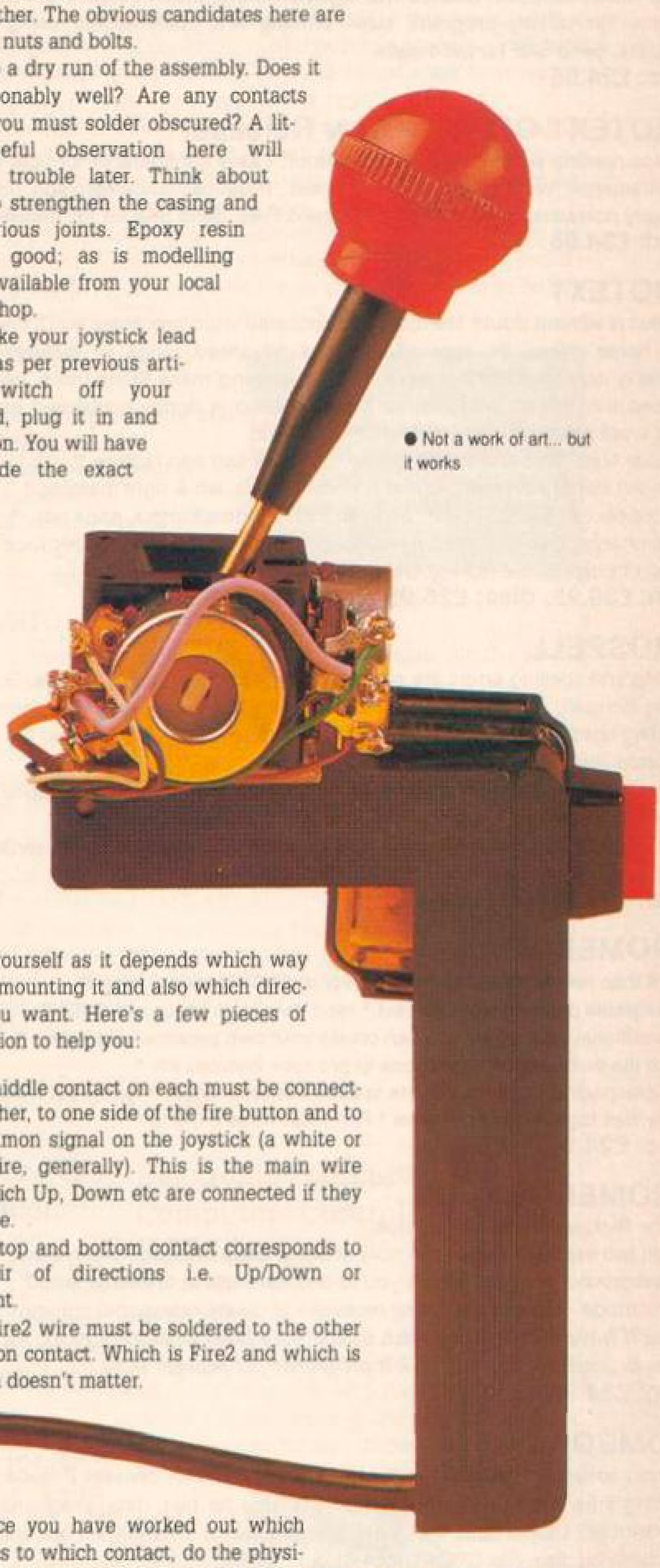
In use, it has a longer travel than most which makes it second choice for waggling games. On the other hand it is ideal for things such as flight simulations, wargames etc where accuracy is important.

Construction

Now you have various strange components, decide just how you want to join them all together. The obvious candidates here are screws, nuts and bolts.

Do a dry run of the assembly. Does it fit reasonably well? Are any contacts which you must solder obscured? A little careful observation here will remove trouble later. Think about ways to strengthen the casing and the various joints. Epoxy resin glue is good; as is modelling putty, available from your local hobby shop.

Take your joystick lead (wired as per previous article), switch off your Amstrad, plug it in and switch on. You will have to decide the exact wiring yourself as it depends which way you are mounting it and also which directions you want. Here's a few pieces of information to help you:



● Not a work of art... but it works

● The middle contact on each must be connected together, to one side of the fire button and to the Common signal on the joystick (a white or black wire, generally). This is the main wire with which Up, Down etc are connected if they are active.

● Each top and bottom contact corresponds to one pair of directions i.e. Up/Down or Left/Right.

● The Fire2 wire must be soldered to the other fire button contact. Which is Fire2 and which is Common doesn't matter.

Once you have worked out which wire goes to which contact, do the physical joining of the skeleton joystick, fire button(s) and cable. When it is fairly secure, perform all the soldering operations. Now you've come to the fun part.

Customisation

Now you've actually built your joystick, you can add to it in a hundred and one ways. Of course, you can do this with any commercially available controller, but this way you get a really personalised piece of equipment.

For instance, I always forget the time when I'm playing a game. So a built in watch is handy for me. I could just stick it on the monitor, but it looks better on the stick. If you do something similar make sure you can replace the battery.

You must ensure that your joystick is comfortable in the hand for long periods of time. Top contender for this is sponge foam. This can be cut to the size and shape you want, with a cloth cover. Alternatively you could use a plastic or rubber handle from an old joystick.

The joystick used for this project is not self centring. If you prefer a joystick that returns to the neutral position when released, I suggest you use some long screws or bolts on the joystick sub-assembly. A couple of elastic bands suspended from these should do the trick.

Finally there's all those lucky charms, furry dice, bishops, policemen and politicians that you just can't wait to hang on your joystick. High scores, slogans, logos and maybe an artistic colour scheme if you have the time.

Honeysoft/Cirkit HS-P1 Parallel Card

£19.95, Cirkit Electronics

Although the CPC has plenty of connections for gadgets – joysticks, disk drives, printers, roms etc – it lacks a general purpose connector for the experimenter. This is generally referred to as a user port, and facilitates items such as robot arms, sensors, burglar alarms etc. This Honeysoft item – now available through Cirkit – aims to fill that need.

What you get doesn't look spectacular, a simple card without even a box. After adding some insulation (masking tape does just fine) you are left with something that looks like a mummified rodent. Big deal?

The hidden beauty of this is the software. With this, you can talk to an external gadget in Basic, letting even a beginner have their computer controlling or listening in to the outside world. I must admit however that some (not a lot!) of electronic theory is necessary.

The abstract picture is that you have two different sets of connectors called ports, labelled as A and B. Each port has 8 bits of information feeding into it. Port B can be set up to input data to the computer or output data to to a device, but not both at once.

Port A has an additional feature called bi-directional mode. This permits you to set each individual bit to either input or output. Oh yes, the device also includes a separate 8 bit printer port which can even be configured to use either BUSY or BUSY and /ACK signals.

Very alternative

For those out there with a Dk'tronics real time clock, you may well know that it contains an input/output port. However the documentation makes no mention of it. So exactly what you do with it is left entirely to your discretion. Dk'tronics products are available from Ram Electronics on (0252) 850085.

For those more interested in home control items rather than experimentation, Red Boxes might be an answer. Red Leader connects to your CPC port. This communicates with the various Red Box modules – alarm, infra-red motion detector etc – through the mains socket. These handy optional extras are distributed through **Electronic Fulfilment Services Ltd**, Chesterton Mill, French's Road, Cambridge CB4 3NP, and were reviewed in issue 17.

GOOD NEWS	BAD NEWS
■ Software is comprehensive and easy to use.	■ No case supplied.
■ Eprom software is cheap (It's on order, apparently).	■ The huge number of nights you will spend on interfacing sundry equipment to your Amstrad. It's an addictive hobby.
■ Manual gets you started well.	

Software

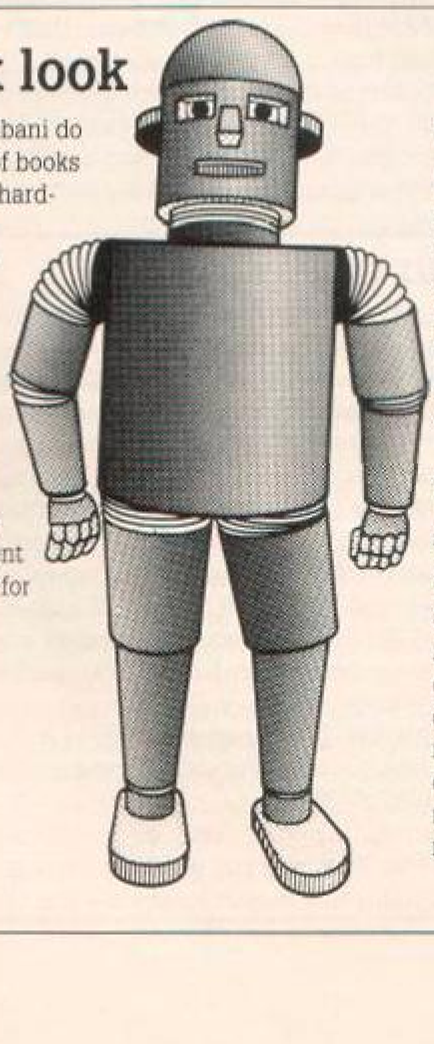
The software which supplies the RSX commands for the card is available in three formats:

Cassette: Costs £4.57 + P&P, available.
Disk: Costs £7.99, available.
Eprom: Costs just £7.99, out of stock at present. Can't be plugged into the card so you will need a Rom board to use this format.

The manual is comprehensive and clear. It gives a breakdown of each command and includes a few simple circuits for switches and circuit control. Not world shattering but helpful all the same.

In conclusion I would like to say that if you wish to become involved in computer control you will find this or a similar device very useful indeed. It is competitively priced and with the 8 bit printer port as well you can't go wrong.

Book look



Bernard Babani do a number of books on various hardware subjects, all at £2.95. All of them assume a fair knowledge of electronics but represent good value for money.

Electronic Circuits for the Computer Control of Robots

R. A. Penfold, ISBN 0-85934-153-4

This book concentrates firmly on the hardware side of robots. It is split down the middle between motor control and sensors. It contains plenty of circuits and diagrams and is a good source book for the enthusiast. Cannot be recommended as general reading.

Easy Add-on Projects for the Amstrad CPC 464, 664 6128 and MSX Computers

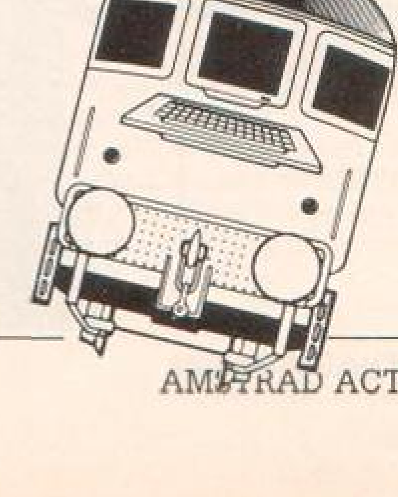
Owen Bishop, ISBN 0-85934-145-3

An Amstrad specific book – well almost – this contains a wide collection of projects for your computer. These include a picture digitizer, model controllers (analogue and digital) and enough projects to make up a weatherstation – rain detector, anemometer, barometer, thermometer etc.

Electronic Circuits for the Computer Control of Model Railways

R. A. Penfold, ISBN 0-85934-154-2

Again this is divided into motor control and sensors. Not aimed at the Amstrad, it contains a reasonable amount of information if this is what you want to do with your machine. Some of the projects are probably beyond what is desired since a totally computerized system is the last thing people want to play with.



WORDS WORK

How to get the most from your word-processor and printer

This month we turn our attention from how to lay out a document, to how your choice of printer affects the end result. What to look for? What to avoid? What must be suffered, and what can be cured?

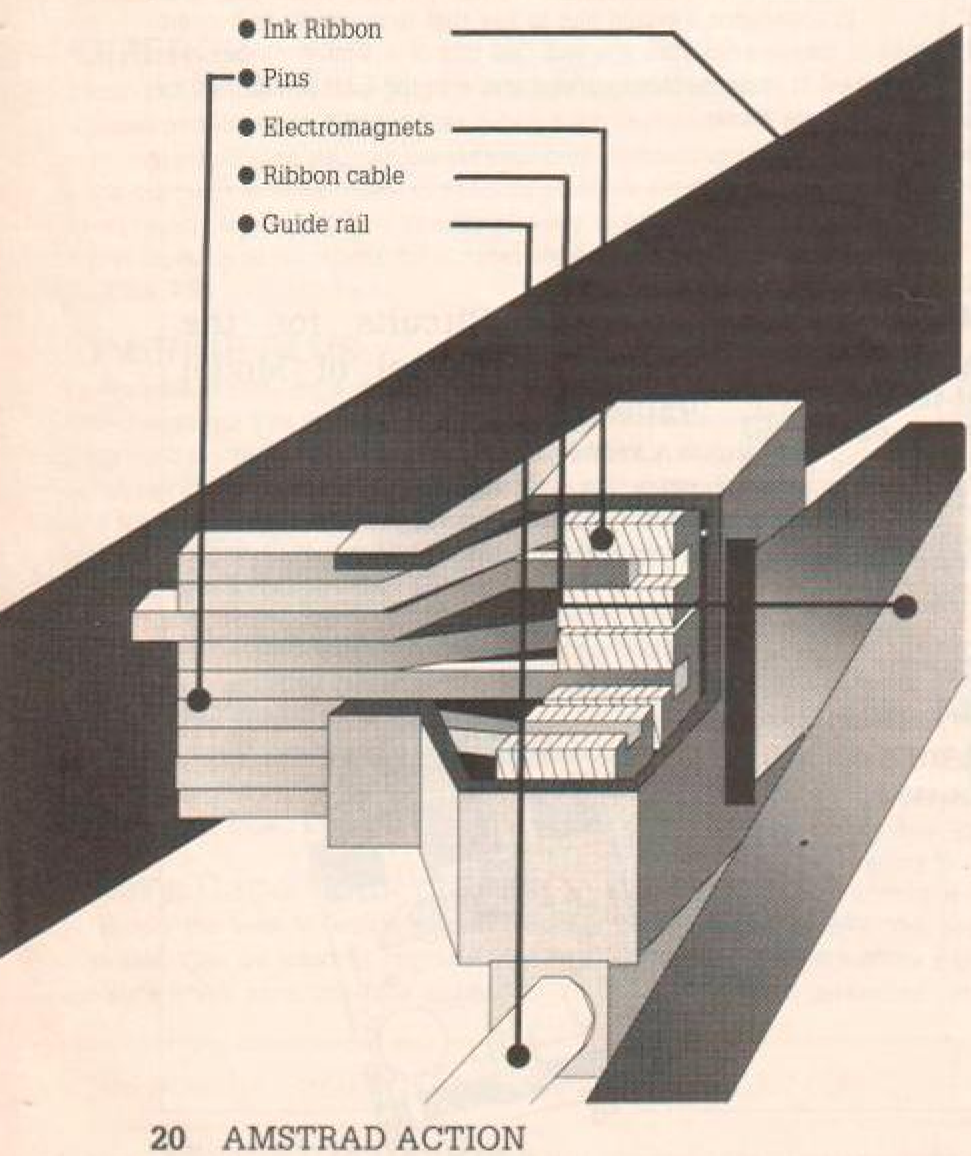
First, an apology. In AA32 the last line was cut off in its prime. A certain ex-resident may have returned from cartoon graveland but we cannot say for sure. To the readers who want to know exactly which processor offers micro spaced text the answer is *Pocket Protext* and *Protext V 2.2*, both available from Arnor and both needing CPM+.

Onwards. There are two main types of printers within the CPC price bracket. One is the dot matrix, the other is the daisy wheel. We'll look at the latter first. Daisy wheels print in a similar fashion to an electric typewriter, with excellent results. It's also rather slow and very noisy.

The dot matrix performs with a reduced noise level at a greater speed. Print quality varies – most look very "dotty". These days most printers can produce better looking characters much more slowly than their normal output. The acronyms for these are NLQ, near-letter-quality, and NTQ, near-typesetting-quality. I've yet to see one outperform a daisy wheel but the day will come.

There is a third category which has yet to catch on. These are ink-jet printers, which work by squirting ink onto the page at the right time and place. This is a very quiet method, and produces an acceptable result. Their faults are that it isn't easy to find one, or spare ink cartridges.

•9-PIN DOT MATRIX PRINTER HEAD



To be, or not to be

A few years ago Epson, who are regarded as being the major maker of printers, decided to set a standard. This standard revolved around a set of codes that could be sent to the printer to produce various effects, such as underlining and graphic mode selection.

Since then a plethora of printers have arrived on the scene which at first glance are Epson compatible. However all that glisters isn't gold, because some of them lack certain features – such as the infamous Shinwa CP-80. This is mostly okay, but lacks quad density graphics, as employed by many of the screen dump and DTP packages available. Qualitas uses this as well.

IBM and Qume have also produced a standard set of control codes for printers. Generally these are outside the scope of this article since they need an 8 bit printer port to make the most of them.

How necessary is it to have a printer that is compatible with a standard? After all, it shouldn't be too difficult to configure software to work with a different system, should it? And most word-processors use a standard code – Ascii. Surely all you need is a printer that can print Ascii values.

The resolution of this argument is – it depends. If your word-processor can be configured to send different codes, it shouldn't matter if the printer isn't an Epson work-a-like. The problem to be wary of is that your printer does have at least a few bare minimum control codes.

Different typefaces: Pica is printed at 10 characters per inch, Elite at 12 cpi, condensed at 17 cpi and double width at 5 cpi.

NLQ/NTQ: a letter will look much better if printed using one of these modes. Double strike isn't as good, because although the characters are darker than usual they still look dotty.

Italics: very useful for highlighting text. Strangely most printers will not print italics while under NLQ.

Formfeed: feeds a page through, so a partly printed-on page will be fed straight through to the end. Much better than turning the platen or inserting extra lines at the end of a document.

One particular printer to steer clear of for word-processing is the Amstrad DMP1. With the upgrade kit it represents a worthwhile product but without it your only real option is to use *Tas-Print* from Tasman. This limits you to using *Tasword* and isn't the ideal solution.

You pays your money...

...and takes your choice. Prices vary tremendously for printers, and this is one peripheral that is really worth shopping around for. Generally dot-matrix types are widely available, and cost from £160 upwards. That particular model is Amstrad's own DMP2160. At this lower end of the price range all dot-matrix printers have nine pins with which to print with. Further up come the 24 pin printers, which have both improved speed and quality. The cheapest of these is the Amstrad LQ3500 for £401.35.

Next come the daisy wheels, which are generally being swamped and driven upmarket. You might get lucky and find one as low as £150, if not then Dataplus Ltd sell the GPR2000 for £228.85 plus P&P. Dataplus can be contacted on (0242) 573573. Electric typewriters are placed into this category as well, but generally they have a poorer performance compared to full computer printers.

Lately come the ink-jets. The cheapest I know of is an upgrade for the DMP1 dot matrix, now out of production. The upgrade costs £60 and is available from IJU, (0252) 510933.

Finally, when buying a printer don't go to the manufacturers. Instead try a local retailer. That way you generally get a good source of extra ribbons and a warranty that doesn't involve the Post Office.

Ways with Words

Do you have favourite tricks for getting the best out of your word-processor? Or do you have seemingly insurmountable problems? Share them with other Amstrad addicts. Send them in to: Words Work, Amstrad Action, 4 Queen Street, Bath, BA1 1EJ.

Half right

I use *Amsword* on my CPC 464+DDI1+RS232. I also use the 8056 serial printer, which will print condensed type from *Amsword* using the printer code facility, but it only prints 80 characters across half the A4 page. I want to know how to get characters running across the page.

A Sheldon, Nottingham

It seems to me that the most likely explanation is that you have not set your right margin to its maximum. So your printer is just printing out in standard Amsword mode, 80 columns across the page.

To use it properly press the left cursor key until you reach column 127. Then press CTRL D. You should now have a ruler stretching right across the screen. Now, whenever you write something you can use all of the printer's condensed mode.

Wrong operating system

Last month (AA32) Richard Monteiro stated in a piece entitled Bar CPM, that *Protext* files are restricted in size only by the space on the disk. On my 6128 I have *Protext* and *Prospell*, both on ROM, but can only get about 12 pages of text into memory and then I get an "out of memory" message and have to dump the file to disk.

I can get five files on each side of a disk, but I would prefer just one long file rather than five small ones, particularly at printing time.

Sameer Bowyer(?), Sunningdale

The version of Protext that Richard was talking about is version 2.2. This runs under the CPM+ operating system and is available on disk only. Your version is on ROM and is therefore the Amsdos version. V2.2 opens a file to the disk, and can therefore have files as large as the capacity of the drive. The Amsdos version cannot.

By the way, it is generally a good idea to include your printed name as well as your signature. That way people don't have to guess the identity of the sender.

Help offered

After reading your article in AA31 I felt that there were a couple of areas in which I could help.

First, with reference to the section on margins using *Tasword*, I would suggest an alternative to embodying the margin by using the function keys. It is better to set the margin at the printer output stage. This has two advantages: no RAM is taken up, and the printer output margin can be saved with *Tasword*, rather than having to be set up each time the word-processor is used.

Second, going back to **Tony Cullingworth**'s letter in the same issue. I also have *Qualitas* and the 8 bit printer port from KDS but do not find it necessary to reset the computer when wishing to change fonts. The way I have done this is as follows. To start with I have a short Basic program called `"DISC"` which contains the printer port patch with an extra line, `RUN TASWORD` – in my case this is line 7. On start up I type `RUN "DISC"` and *Tasword* runs. Either before or after entering text a *Qualitas* font can be changed or added, the following procedure being used.

Enter Basic from the main *Tasword* menu and enter `RUN "Q"`. "Q" is the name given to the *Qualitas* program, with line 240 reading `RUN "TASWORD"`. When in *Qualitas* any fonts(up to three) may be loaded, after which *Tasword* automatically reloads collecting the previously entered text from RAM.

R.H Bartlett, Kent

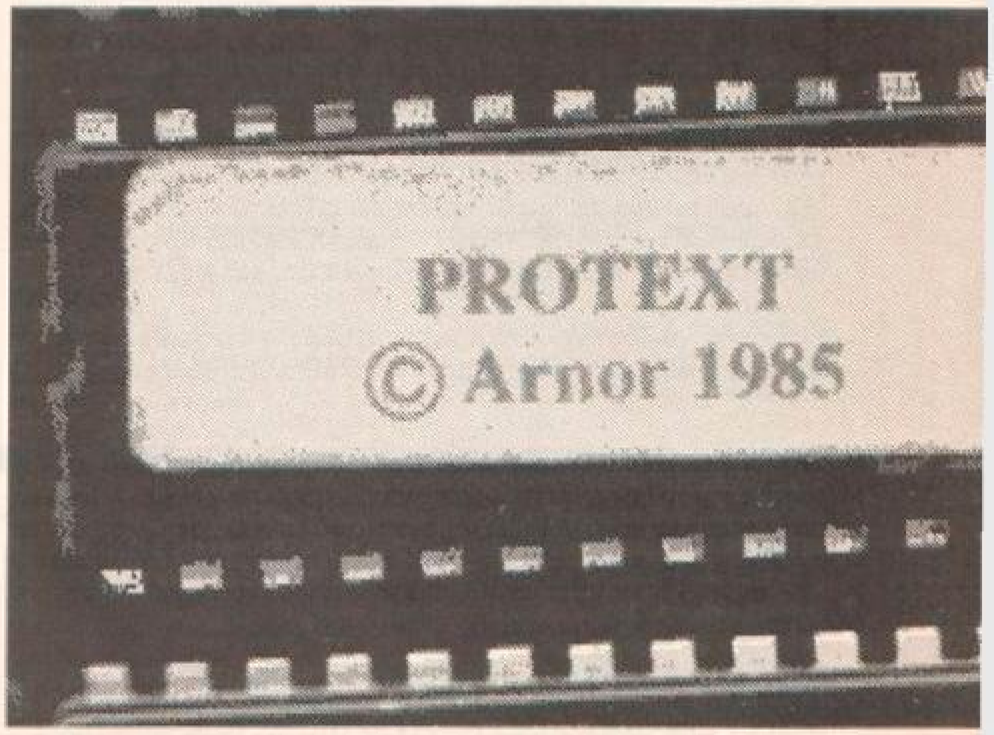
Font designer

I have completed writing an editor for the second character set of *Tasword*, as well as a WIMP environment suitable for programmers working on Amstrad projects who would cherish such a tool. To receive the programs send me a disk plus £1 to cover postage and packing.

I have also found the graphics print density poke for the second character set. This assumes you have installed `PRINTEPS.BIN` as stated in the `README` file. To change the graphics density go into Basic from the main menu and enter `POKE &9D2B, GD`. GD is the density code. For example, if 76 is poked into memory the density will match condensed.

Try experimenting to find different density codes.

Peter Tewkesbury, Manchester



Let's be bold

I use a *Protext* ROM on a 6128 linked up to a Brother CE-61 typewriter through a Brother IF-50 interface. While the typewriter has a bold print option, I cannot activate this by a command code (according to the IF-50 manual).

If I want to print a paragraph in bold I therefore insert a 'WAIT' command (>WT) and physically press the "Bold" button on my typewriter. I then recommence the output by pressing the space bar on the computer.

This works fine for whole paragraphs, but I cannot highlight individual words in bold since the "WAIT" command cannot be used in the middle of a sentence. How can I get the printer output to pause between words?

Victor Allen, London

Unfortunately we can't help on this one, Victor. Has anyone out there got any ideas?

Brunword print codes

A dodge that I find useful with *Brunword* is to redefine one of the function keys so that, when used in conjunction with SHIFT, it inserts the sequence 0,0,27 into the text – the code for ESC. I can then send control codes of any length to the printer by operating this and following it with the necessary characters. The principle can be applied to any word-processor by defining a key to produce ESC.

In a similar way I can set up two keys to produce up to six characters. The first three I put on a function key used with SHIFT and the last three on one used with CTRL. The two used together then send 6 characters. I find this very useful in overcoming *Brunword*'s limitation to 3 character codes per function key.

M Catton, Gosport

Absolute Beginners

A series of articles taking you from complete ignorance to COMPLETE mastery of Basic

The story so far

A program is a series of commands and compound commands, each with its own number at the start. The commands are called lines, and the numbers are their line numbers. The lines are stored away as they are typed in. Your CPC doesn't obey the commands until you tell it to, using the command **RUN**.

On receiving this command, the CPC goes through the lines, starting with the lowest line number and working through to the highest. When it's finished the last command in the highest-numbered line, it puts up the message "Ready" and waits for your next instruction. Now read on...

Before we start on the serious business of program editing, here's a little program for you to type in and run:

```
10 FOR c = 1 to 100
20 PRINT "This is just one of a hundred identical messages"
30 NEXT c
```

It isn't very useful, but it does illustrate an important idea. If you had to type in a hundred lines which all read **PRINT** etc, you'd wear your fingers out. Using the commands **FOR** and **NEXT**, however, you need only have one copy of the instruction. The CPC can then perform the task over and over again – a process called looping.

I'm not going to tell you how to use **FOR** and **NEXT** just yet. If you really want to learn a new command right this minute, try the command **NEW**. This wipes out the current program. Use it now, and you'll have a blank CPC.

Editing a Program

Take a look at this program:

```
10 CLS:MOVE 300,180
20 DRAW 340,180,1
30 DRAW 340,220,1
40 DRAW 300,220,1
50 DRAW 300,180,1
```

You may be able to work out what it does just from the listing. If you can't type it in and **RUN** it to find out.

First Bytes

So, hexadecimal horrifies you? We have the solution in this section devoted to the novice machine code programmer.

You learned last month that the Z80 processor has a collection of registers, which can be thought of as pigeon holes, capable of storing values between 0 and 255. Registers can also be thought of as processor ram – very fast ram. This month we shall look at methods of storing numbers in the various registers and define memory.

Basic starts at memory location 368 (170 in hex). This means any Basic program you write will grow upwards from location 368. For instance, reset the machine and enter the small program below:

```
10 PRINT "This is a BASIC program."
```

To view the program as numbers in memory enter the following in direct mode:

```
FOR t=368 TO 400:PRINT PEEK(t);" ";:NEXT
```

If you wish to see the numbers in hexadecimal enter:

```
FOR t=&170 TO &190:PRINT HEX$(PEEK(t),2);" ";:NEXT
```

Alternatively you might like to see the Ascii representations of the values held in memory:

```
FOR t=368 TO 400:PRINT CHR$(1);CHR$(PEEK(t));" ";:NEXT
```

More on memory

Standard 464s and 664s have 64k of ram (random-access memory) and 48k of rom (read-only memory). 6128s have a further chunk of 64k, giving them 128k of ram in total. Ram can be read or written to. In other words, numbers can be stored in memory and values retrieved from memory. But not any old number. Each memory cell or byte can hold an 8-bit binary number (anything between 0 and 255 in decimal, 0 and FF in hexadecimal or 0 and 11111111 in binary).

For now we shall assume all the machines have 64k memories. If one k is equivalent to 1024 bytes (storage spaces for 8-bit values) then it seems reasonable that 64k is the same as 65536 bytes.

Each memory cell or byte is differentiated by a number – in the same way as houses in a street. Memory starts at 0 and continues through to 65535. Basic and machine code programs are stored in, and use, memory.

To get a better picture of memory have a look at the diagram. The shaded areas are used by the computer and not normally available to the user. Locations 0 to 64 (hex 40) are taken up by RST and interrupt vectors – for the moment these are best left alone and under no circumstances should the values held there be changed (no harm will come to your machine, but the result could crash the computer with subsequent loss of your program). Locations above 64 to around 42000 (A410) are free for your own programs. The upper limit is dependent on your system setup. If you have lots of roms plugged in then available memory is less. Anything above the upper limit and below the start of screen memory (C000) consists of firmware and system variables – unless you know what you're doing it is best to keep away from these areas.

Rom is a different kettle of fish. You can read the values stored there, but you can't modify them. Rom is used by the computer. It stores the Basic interpreter and the various routines used by the machine to print text to the screen, make noises via the sound chip, scan the keyboard and so on.

There are two roms (each 16k in size) in the Amstrad computer. One shares ram locations 0 to 16383; the other shares with the screen memory. The computer normally takes care of the time sharing. And, unless you tell the machine otherwise, ram will always be selected.

Done that? Now, you should have a small square drawn in the middle of the screen, and the **Ready** message up in the corner to let you know the CPC's finished the program. Line 10 clears the screen and **MOVE**s the graphics pen into position, and the other lines each draw one of the sides of the square.

If you wanted, you could add lines to the program simply by typing them in. As we saw last time, the line number of your new line determines where it goes in the program. A new line with the number 35, for example, will go in between line 30 and line 40. What we didn't cover was how you could alter, replace or get rid of program lines.

Crossed Line Numbers

Whenever you type in a program line the CPC checks to see if there's an existing line with the same number. If there is one, he replaces the old line with the new one. Thus, the new roof-drawing line 40 takes the place of the original `DRAW 300,220,1` line 40.

OK let's learn how to replace program lines. Suppose you want our program to draw a house rather than a square. To do this, we have to get rid of the command which **DRAW**s the top line of the square. In its place we'll need two commands,one for each slope of the roof.

The line we're interested in is line 40. This moves the graphics pen from the top right to the top left corner, drawing a line as it does so. Now, if we can replace this with a new roof-drawing line, we'll be in business. Type...

```
40 DRAW 320,240,1:DRAW 300,220,1
```

...and you'll find the program now draws a house when you **RUN** it. Type **LIST** to take another look at the program, and you'll see what's happened.

If you only want to make a small change to a line, you can use the **EDIT** command. Suppose you want to **DRAW** the first line in a different colour, for example. To do this, you just need to change the last DRAW operand – the number 1 in line 20. It would be a lot of effort to retype the line just for this, but fortunately you don't have to. Type...

```
EDIT 20
```

...and your CPC will put line 20 up on the screen, complete with a cursor to edit it with.

You can alter the line as usual using the left and right arrow keys to move the cursor, **<del>** key and then type "2" to replace it. When you've finished editing the line, just hit **<Return>** (or **<Enter>** on older machines) and the CPC will store it away in place of the old, un-edited version.

Finally, you can wipe out unwanted lines altogether. If you type a number on its own and hit **<return>**, the CPC takes this as meaning "Find the line with this number, and throw it away". You can get rid of the house's left-hand side in this way. The line that draws that section is line 50, so delete it by typing the number 50 and hitting **<return>**. Try **LIST**ing and **RUN**ning the program, just to check it's worked okay. You can also try deleting a line that the program doesn't actually have – line 60, for example.

As an exercise, try to get the program back to its original state using these editing techniques. Once you've done that, **RUN** it to make sure it draws a square again.

Peek and poke

The Basic command **PEEK** does all the work. It simply looks up a specified memory location or address and returns the value stored there. **POKE** does the opposite – it lets you change a number stored in any memory location.

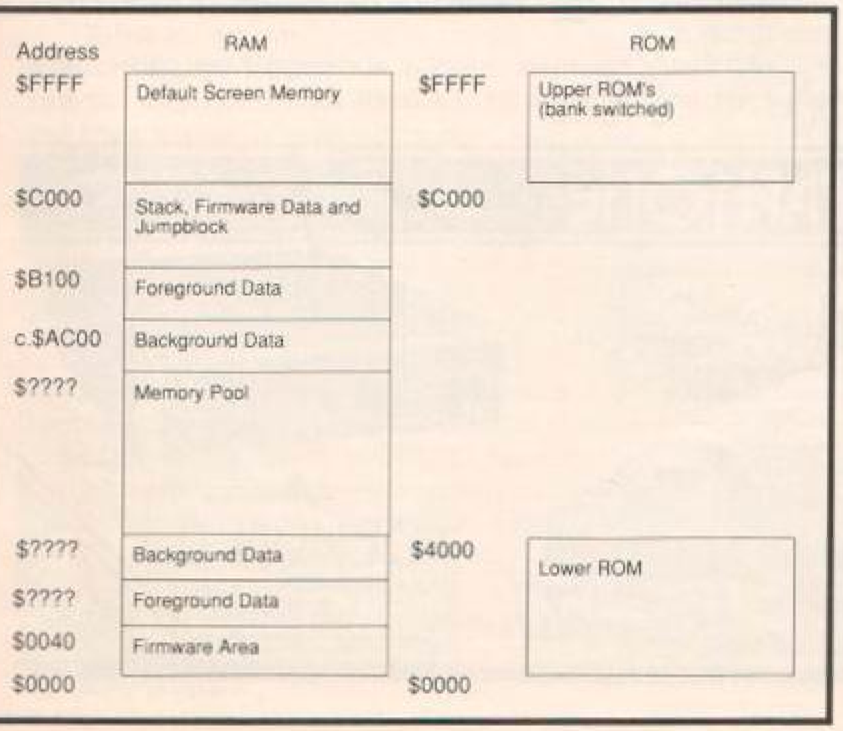
The first routine will have displayed your Basic program as a series of decimal numbers. Something like:

```
33 0 10 0 191 32 34 84 104...
```

The first value, 33, tells the computer how many bytes a particular line takes up – 33 in this case. The third number refers to the line number which just happens to be 10. It is painless to substitute new numbers in place of the existing ones. For example, `POKE 370,20` followed by return will renumber line 10 to line 20. To prove this enter **LIST**. Try **POKE**ing the address with different values, even 0.

You probably know that the highest number that a line number can have is 65535. But using the **PEEK** and **POKE** method described above this would seem impossible as it is only permissible to **POKE** locations with values in the region of 0 to 255. Try **POKE**ing location 371 with a value (`POKE 371,2`, say) and then **LIST** the program. Can you guess what is happening? Answer next month.

You may be wondering why we are covering Basic programming at present. The reason is that certain techniques – like **PEEK**ing and **POKE**ing – provide excellent ground material before the battle with assembler. If you can grasp the concept of memory, addresses, **PEEK**ing and **POKE**ing then it's likely you'll cope with assembler and machine code.



Hackers Only

The box that caters for more advanced programmers.

As a departure from the more usual mathematical routines we have been publishing lately, here is a routine to print a character at double its standard height. Ensure the A register holds the Ascii value of the character you wish expanded. The character will be displayed at the current cursor position.

Entry conditions: A holds character. Exit conditions: AF, BC, DE, HL and IX corrupt. Length: 71 bytes. Code type: position dependent.

```
        org &8000
        CALL &B906
        PUSH AF
        LD A,(IX)
        CALL &BBA5
        LD IX,buffer
        LD B,8
loop
        LD A,(HL)
        LD (IX),A
        INC IX
        LD (IX),A
        INC IX
        INC HL
        DJNZ loop
        POP AF
        CALL &B90C
        LD A,254
        LD HL,buffer
        CALL &BBA8
        LD A,255
        LD HL,buffer+7
        CALL &BBA8
        LD A,254
        CALL &BB5A
        LD A,10
        CALL &BB5A
        LD A,8
        CALL &BB5A
        LD A,255
        CALL &BB5A
        RET

store   DS 16
```

Earth Calling CPC

In this, our first coverage of the Comms world in quite a while, Pat McDonald gets on-line.

What's the fuss?

Your computer sits alone. It cannot really talk to the outside world, except for someone who sits down at the keyboard. It is bored and frequently sulks. What it really needs is to get out and about, meet new friends, find a hobby.

Most computers the world over suffer the same problem. What is needed is to get them talking to each other. Luckily the physical connections for this are already in place – the telephone network.

So what you need is some equipment to connect the CPC to the phone line. But is there anything worthwhile connecting to? The answer is an emphatic yes. Hundreds of thousands of computers can talk through the phone lines. There are two professional forms of service offered:

●Databases. These store massive amounts of information and can let you look through it. Subjects include bibliographic records, financial information, legal precedents and case histories, weather reports – the list is endless.

●E-mail. Electronic mail is in many respects superior to what is snidely referred to as "snail-mail". For a start it isn't hindered by delivery times or strikes. Messages are actually stored on a separate computer to which you can dial from anywhere with a telephone. That way you can look through your messages without physically having to move back to your address.

Confused yet? Read on!

Both ends of a telephone must be correctly synchronised. The term for the many different functions which must be the same is called the protocol. An example of protocol:

Send at 75 bits per second, receive at 1200 b/p/s, handshaking on, 7 data bits, even parity one stop bit. Viewdata.

This is the protocol used by Prestel, British Telecom's information service.

If this little taste has stimulated your interest, read "The New Hacker's Handbook" by Hugo Cornwall, ISBN 0-7126-9711-X, published by Century Hutchinson Ltd at £6.95. You can dip into this one as deeply as you wish – it's very readable.

There are two other hobbyist orientated services. The first is the bulletin board. There are literally hundreds of these all over the globe. Generally they are run by enthusiasts on the subject using micro-computers. Again they cover a wealth of different subjects. Secondly, and just beginning to really take off are the play-by-modem games.

Any advocate of the Pilg's pages will have played adventure games. Play-by-modem games allow many people at once to take part in a huge adventure game. They can interact their characters with other players.

Now the bad news. To get to grips with this fun subject will require three more add-ons for your computer. A modem takes the information from the telephone and feeds it into an RS232 interface on the computer. As well as these two, a computer program (terminal emulator or comms package) must be purchased to drive the whole system.

Two possible products are reviewed here. Amstrad produce an RS232 interface complete with Comms software. KDS also produce one for £46, again with some ROM software. Cirkit produce an ultra cheap system containing all three parts for connection to viewdata only. At £30 you can't really go wrong.

Finally, we come to the reason why most people don't go in for Comms. Imagine all those phone bills (especially overseas!) adding up, and up, and up. Luckily a service called PSS operates. This can drop the cost dramatically, because the only telephone charge is for a local call.

As a postscript, many professional services charge money for using them. Registration is necessary to use them properly although some allow a "guest" facility for people who want to try before they buy.

Comms Software

After a fallow period of about a year, Comms Software (also called terminal emulation software or termulators for the advanced nutter) is making a resurgence. The Cage Comms ROM, costing £32 from Arnor, has a similar characteristics to *Axis* but also allows protocols to be changed. The carousel is smaller but faster than *Axis*.

For those out there who appreciate ease of use, CommStar is still being bundled with the Amstrad/Pace RS232 interface. This is unbelievebly user-friendly but is starting to show its age in a couple of areas. Still good value at £59.95 for the pair of them. To be released is Dataphone's KDS software for their Designer/Demon models. Watch this space.

Demon II/Designer modem

Dataphone Ltd, £79.95/£99.95

Modems are the most necessary part of any Comms system. Generally they cost at least £100 even for a cheap one. This offering from Dataphone promises power at an excellent competitive price.

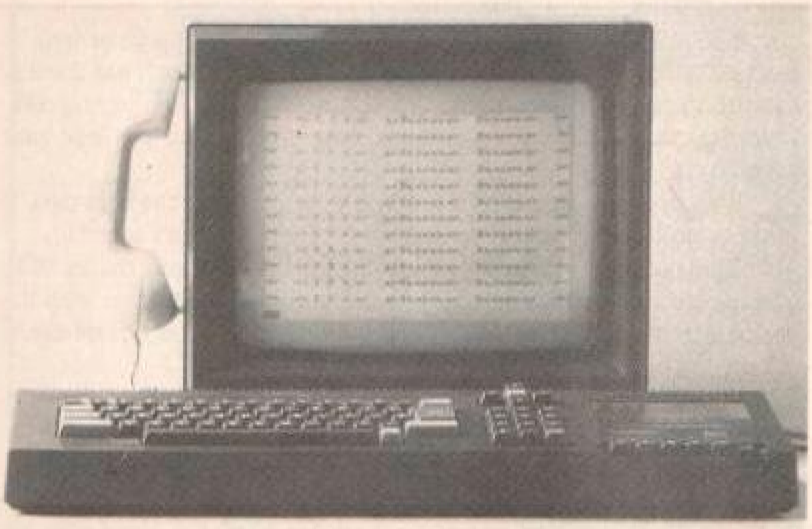
Both modems measure about 20 cms by 25 cms, in a cream colour scheme. A little discordant matched against the CPC. As you'd expect, the *Designer* is the *Demon II* plus some extra features. Here's the basic spec;–

Baud Rates: both 300/300 and 1200/75, answer and originate are supported.

Auto Answer/Auto Baud Rate scan: these functions are implemented for those who wish to run their own bulletin board.

Auto Dial: excellent feature this. Dial through the modem rather than around it.

LED Status Indicators: V23/V21, answering a call, online, carrier detect and transmit/recieve are all apparent.



Extra facilities for the *Designer* are:

Monitor: a speaker that lets you listen to the line.
Override buttons/Telephone Socket: facilities to allow you to use a manual system with a telephone for dialling.

The concept of using the *Demon II* is that you have some clever software to use the automatic features, which work to CCITT pulse dialling standard. No calls to North America, I regret. If you want manual control you will have to get the *Designer*.

The manual, while a little thin, does explain things in a clear style. It includes plenty of technical info, which is restrained to its own section. The registration fee for Microlink is waived if you join via the form in the back. In use, the modem performs very well and represents a genuine bargain. Highly recommended.

GOOD NEWS	BAD NEWS
■ Excellent price and performance. ■ Babt approved. ■ Good documentation.	■ No bell tones ■ No 1200/1200 full duplex (But then who needs it?).

Axis

Monflair Computer Systems, £29.95, CPM Plus only

Axis is a new comms software package which runs under the CPM+ enviroment. It is designed to be set up for one particular usage, but can be configured to use a variety of equipment.



Before you can start dialling up bulletin boards, you must design a profile to suit. First you must input which RS232 interface you are using. At present, you can only select Amstrad/Pace, KDS or Cirkit.

Next you input which modem you have. Special drivers have been set up for three types; the Tandata TM100/110, the Dataphone Designer/Demon and the Modem House Voyager 7. Two other general configurations have been provided – manual (for hand dial modems such as the Miracle WS2000) and Hayes compatible.

After that, you go through the usual tedious process of selecting Tx Baud rate, Rx Baud rate, word length, start/stop bits and parity. Think about it – every combination you use will neccessitate another profile. (sigh)

There are features within the profile generator to allow you to edit and delete profiles. It is possible to set one profile to be the default under the comms program.

Once a profile has been set up the *Axis* system kernel can be run. If you do not want to send an automatic dial-up or logon you must suppress it with an option.

Concentration

Axis has two terminal modes, Viewdata and straight Ascii. The latter is a good all around emulator which is suitable for connection to Telecom Gold and the hordes of bulletin boards. Viewdata is the standard which Prestel, a few data services and even the odd BB use.

Both are menu driven, both support document transmission but the viewdata software is what I'll be concentrating on for the rest of the review. It's probably the reason why most people will buy *Axis*

The Prestel/Viewdata display is good, considering that this is a CPM based product. It uses the standard Viewdata format of 24 rows by 40 columns. The last line is used as a status indicator by Axis. Software can be downloaded in standard CET or compacted format, and *Axis* can tell which is being used without reference from the user.

Two realtime print options are implemented. One is a sixteen shaded graphics dump, the other just dumps the text. The latter is much quicker which is important when you are on line.

On the other hand, with the soaring price of telephone calls and connection fees, it is generally considered standard to be able to store frames. That way you can consult them at leisure, rather than reading them when the bill is going.

Contacts

Amstrad, ☎ 0277 230222
Brentwood House, 169 Kings Road, Brentwood Essex CM14 4EF
Dataphone Ltd, ☎ 0733 230240
22 Alfric Square, Woodston, Peterborough, PE2 0JP
KDS Electronics, ☎ 04853 2076
15 Hill Street, Hunstanton, Norfolk PE36 5BS
Monflair Systems Ltd, ☎ 01 367 1777
PO Box 1008, Enfield, Middx EN1 1DU

Axis implements this very well, with a large memory capacity for frames. Up to 170 can be put onto a disk. It can also remember electronic mail messages, with the same capacity. The only thing to bear in mind is that the files must be on separate disks if you are using them to the full.

The actual grabbing is done at the press of two keys. The software then goes into a local mode until the frame has been duplicated.

Why am I going into so much detail? Well, the heart of the system is Microbase. This handy little device lets you combine all the frames into one huge carousel. To make up your own pseudo-viewdata service, in effect. Although it is NOT a bulletin board, and do not be mistaken: the setup can only be viewed on an Amstrad, not transmitted down a telephone line.

The Frame Linkage Editor provides the options for setting up the channels for the carousel – what frame is connected to other frames and the menus necessary to route things as you want them to be. It is difficult for the newcomer to get to grips with, but after a little messing about with frames it becomes easier.

Also included is the ability to edit frames in standard viewdata form. This gives many insights into just how the system is organised, and I for one welcome it. I never did understand just how the data corresponded to what went on screen.

All in all *Axis* is an excellent comms package. It can squeeze a good performance out of the semi-smart modems such as the *Designer/Demon*. For going on to Prestel it is very good, and the TTY/Ascii mode is standard. But do remember that it must be preset to what protocol you need.

GOOD NEWS	BAD NEWS
■ Excellent Prestel mode. ■ Large capacity carousel. ■ Very user-friendly.	■ Protocol cannot be changed on-line. ■ Disk based, so slightly slower than ROM (more capacity though).

Anyone for Midi?

Are DHCP's low cost midi products music to a CPC's ears? Pat McDonald finds out.

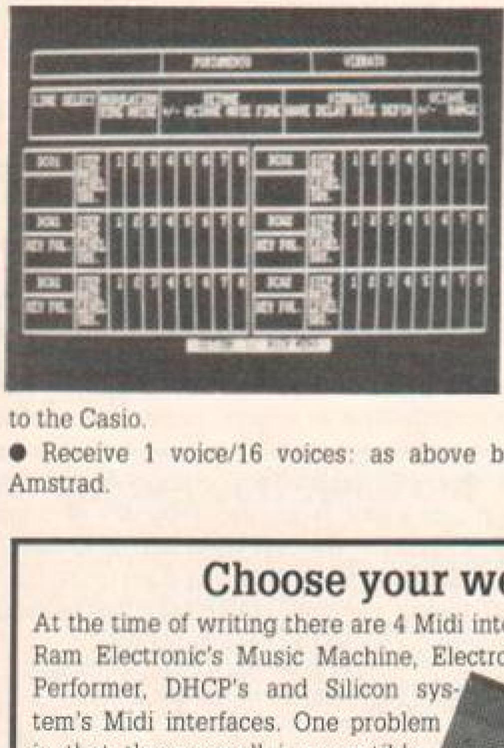
Casio CZ101 Voice Editor

DHCP, £22.50 tape, £29.95 disk

Casio produce one of the best all-around range of synthesizers in the CZ series. One of their few faults – which is common with most synthesizers – is that setting up a new sound is rather difficult. This new product goes a long way toward improving the synth's ease of use.

On loading you are presented with a straightforward menu, which is manipulated by the cursor keys and return. The options available from here are:

- Monitor: once selected the program will let you examine the values of the currently selected voice. Handy for preparing a patch sheet of a voice.
- Editor: the heart of the program. From here you can quickly and easily alter all of the parameters of a voice. You have a choice, either to enter the data as numbers or to use the cursor keys to draw a graph on-screen. A simple solution to a difficult problem.



- Transmit 1 voice/16 voices: this will send either the voice in the Amstrad or a file of 16 voices from the tape/disk to the Casio.
- Receive 1 voice/16 voices: as above but from the synth to the Amstrad.

Choose your weapon

At the time of writing there are 4 Midi interfaces for the Amstrad – Ram Electronic's Music Machine, Electro Music Research's Midi Performer, DHCP's and Silicon system's Midi interfaces. One problem is that they are all incompatible with each other. So the best software – EMR's – can only be used on the EMR box.



DHCP's policy is to write a software package and to customize it for each interface. So although you have to check with DHCP that a particular package is available for your interface, in general you will be lucky. There is a separate version of the voice editor available for the CZ230.

- File operations: deals with the tape or disk unit. You can save or load single voices or 16 voice files. Also, single voices can be added together to form banks of 16.

The faults of the program cannot be described as crippling. The documentation does explain the features, but in a flat and terse style. It can't be described as well laid out either. Also, the program has the disconcerting habit of crashing to Basic if it can't get a file from the disk. Entering CLEAR and then RUN sorts out the problem but you lose your sound data.

The program also hangs if nothing is connected to the Midi port. It is annoying but then again I caused the problem, so I can't complain.

The program is certainly very useful to the Casio owner. The screens are well laid out and easy to use, and experimentation with the sound is quite engrossing. Overall I believe that this product represents fair value for money.

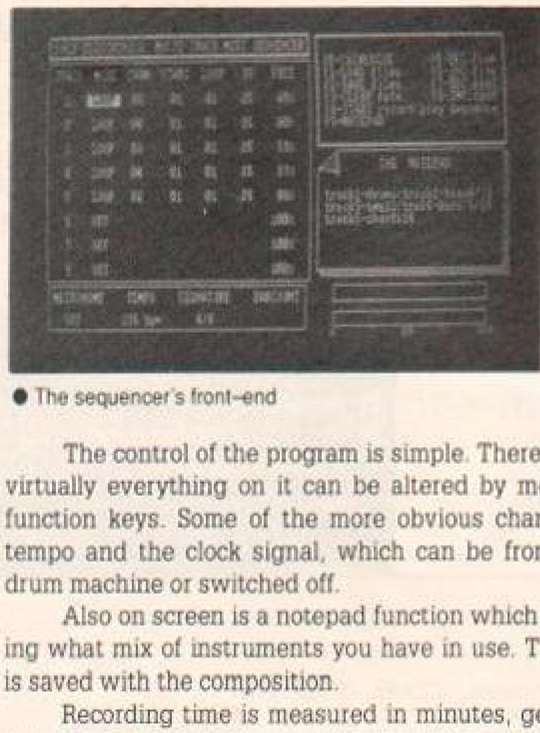
GOOD NEWS	BAD NEWS
■ Enhances your Casio no end. ■ Fun to use. ■ Available for a range of interfaces.	■ Poor manual. ■ Occasionally crashes.

Midi 8 track Sequencer

DHCP, £22.50 tape, £29.95 disk

Unless you have bought the excellent EMR *Miditrack Performer*, the chance to use an 8 track sequencer has been denied to you. Now however, multi track recording and playback is available to the deprived with Ram's *Music Machine* and DHCP's interface.

A sequencer is a device that allows you to record and playback different tracks at the same time. You can edit and rearrange the tracks, making some repeat while others just play through, until you are satisfied with the result.



● The sequencer's front-end

So an 8 track sequencer can do all these tasks on 8 independent channels. This is very useful if you have 8 or less Midi controlled devices. You could have a drum machine on channel 1, a bass synth on line 2, a treble/lead synth on line 3, a sampler on 4 etc.

The control of the program is simple. There is only one screen, and virtually everything on it can be altered by means of the cursor and function keys. Some of the more obvious changeable values are the tempo and the clock signal, which can be from the Amstrad, from a drum machine or switched off.

Also on screen is a notepad function which is useful for remembering what mix of instruments you have in use. This is easily edited and is saved with the composition.

Recording time is measured in minutes, generally at least four or five. Complex melodies can shorten this or simple repeated ones can lengthen it. Included on the disk or tape are two mixes of the same song, one for four tracks and the other five.

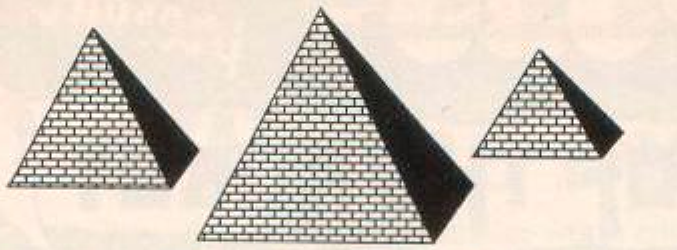
Niggles about the program are centred on the specification. For instance, the program records to sixteenths of a note, rather than twenty-fourths. Another thing is that it cannot record manual pitch bend, and there is also the hassle of no Midi clock.

GOOD NEWS	BAD NEWS
■ Well laid out and easy to use. ■ Cheap at the price. ■ Updated version on the way.	■ Misses certain features. ■ Manual assumes a fair knowledge of subject.

As with the *Voice Editor*, the manual for the sequencer is very small and doesn't go overboard with explanations or examples.

Happily, DHCP have said they will release an updated sequencer in the near future which will include all the above features plus maybe a few more, which will be very good news indeed. Even as it is though, this sequencer represents a value for money buy.

DHCP Electronics ☎ 0440 61207
32 Boyton Close, Haverhill, Suffolk CB9 0DZ



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ROMANTIC ROBOT *present*

1988 – THE YEAR OF THE ROBOT



Q: WELL, I'VE HEARD OF THE YEARS OF THE CAT, PIG, AND EVEN DRAGON – BUT THE YEAR OF THE ROBOT?

A: Absolutely! And ROMANTIC ROBOT wish to make 1988 a truly memorable year (if not us, who will?). To kick off with, there is an INTRODUCTORY OFFER OF **£29.88** ON RODOS, plus a truly unique 1988 SPRING MAIL ORDER PRICE OF MULTIFACE TWO – **£42.88**

Q: I LOVE SALES. BUT WHAT'S SO LIKEABLE ABOUT RODOS and MULTIFACE?

A: RODOS is too powerful and complex to be summed up here – please send a SAE for full info. MULTIFACE is (simply) a MUST for ANY CPC owner: it can copy and change programs as you wish.



Q: OH, DO I NEED TO DO ANY PROGRAMMING TO MAKE BACK-UPS?

A: NO! – NOT with the MULTIFACE TWO – it is in fact the ONLY product on the market which works FULLY AUTOMATICALLY. You LOAD any program as usual, RUN it for as long as you like and when you wish to make a copy you just press the MULTIFACE's red button and follow the menu and on-screen instructions.

Q: HOW DOES IT WORK THEN? IS IT EASY? USER-FRIENDLY? ERROR-TRAPPED? IDIOT PROOF? GUARANTEED?

A: YES! It works a treat and it could not be easier. The menu gives four basic options – to **SAVE** a program, to **RETURN** to continue it, to **JUMP** (say to your own routines – invaluable for hackers) and **TOOL** to access the MULTI-TOOLKIT set of built-in utilities. For example pressing **S** to **SAVE** will first allow you to **NAME** the back-up and then let you save a **PROGRAM** or just a **SCREEN** to **TAPE** or **DISK**. Before the saving itself, MULTIFACE compresses the program so that it takes the least amount of space on tape/disk and will re-load as quickly as possible. Once a program is saved, you can **RETURN** or **JUMP**, use the **TOOLKIT** to change it, **SAVE** it again, etc.

Q: DON'T YOU CORRUPT THE SCREEN WITH YOUR MENU, INSTRUCTIONS, PULL DOWN WINDOWS, ETC.?

A: NO. MULTIFACE TWO has its own memory (8K ROM & 8K RAM) and a lot more hardware – thus when it finishes its job or when you re-load your back-ups, everything is **FULLY** and **AUTOMATICALLY** restored: screen modes, colours, windows, etc. This is essential and NO OTHER DEVICE CAN DO IT!

Q: OK, SO MULTIFACE CAN COPY FROM **TAPE TO DISC**, *BUT CAN IT DO* **TAPE TO TAPE** *OR* **DISC TO DISC** *OR* **DISC TO TAPE?**

A: Of course it can. MULTIFACE saves either to tape or disc and it saves whatever happens to be in the computer at that time – no matter how you loaded it in.

Q: SO FAR SO GOOD. BUT CAN'T I DO ALL THIS WITHOUT THE MULTIFACE?

A: ABSOLUTELY NOT! First, you need a hardware device, a "magic box", to be able to stop and copy programs AT ANY STAGE – be it upon loading, half-way through the game, etc. Tape/disc copiers can only try to copy programs BEFORE they load: if there are unorthodox loaders, speedlocks, protections against copying, etc., you'll end up with a problem – but not with a back-up. Also, with MULTIFACE you can poke infinite lives, ammunition, etc. – and then SAVE.

Q: MULTIFACE IS NOT THE ONLY 'MAGIC BOX' ON THE MARKET – WHY SHOULD I BUY IT MORE THAN ANYTHING ELSE?

A: There are four devices on the market. Action Reply by Datel Electronics, Disc Wizard by Evesham Micros, Mirage Imager and MULTIFACE TWO. Each manufacturer would naturally argue his product is the best buy – fortunately (for you and us), MICRONET recently compared all four units and MULTIFACE TWO came out the best in literally all respects: the most successful one – 100%!, the ONLY AUTOMATIC ONE, the FASTEST ONE both in LOADING *AND* SAVING time, the one taking the LEAST ROOM when saving – and you still get a couple of EXTRAS: a RESET button and an extensive and unique MULTI-TOOLKIT.

Q: MULTIFACE IS IT! THE RIGHT THING IN THE RIGHT TIME! IF ONLY IT PAID FOR ITSELF...

A: But it does! By the time you buy 8 programs on tape instead of disc, you will have saved £40 – the cost of the MULTIFACE. The money you save on further programs is all yours

... **MULTIFACE — worth every penny, saves you pounds!**

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Just one ROM will turn your CPC into a professional set-up: With RODOS you can attach additional disc drives – 40/80 track, single/double sided and store more than 800k per disc.

RODOS NEW

But RODOS is in fact much more than a fast and perfect DOS. RODOS also gives you RANDOM ACCESS, PRINTER BUFFER, full ROM manager, SILICON DISC, altogether 54 new bar commands, enormous power – all this and much more for £29.88 only!

multiface two

SPRING MAIL ORDER SALE PRICE £ 42.88

RODOS INTRODUCTORY OFFER-ON ROM £ 29·88

The special price of £42.88 applies strictly to mail orders received with coupon below before the 30 June 1988

Tape-to-disk at the touch of a button. Ridiculous, you may say, but it works every time. *Multiface* can stop any program in its tracks and save the program from memory to either tape or disk. It's completely fool-proof. Similar products have had problems with screen size, colour and even sound; *Multiface* can handle all these without a second thought.

That alone would have satisfied many people, but Romantic Robot has gone one step further, incorporating a memory editor. No program is safe with this: everything is out in the open, including the Z80 registers, CRTC data and any part of memory.

Don't be fooled into thinking this will result in mass piracy, however. The *Multiface* unit itself must be plugged into your Amstrad to allow reloading of a program it saved.

Multiface II must be the cleverest hardware device at present – a necessity for disk owners who thought they were stuck with loading from tape every time.

AMSTRAD ACTION JANUARY 1987

THE YEAR OF THE ROBOT · BE PART OF IT

I order MULTIFACE 2 (£42.88) ☐ / RODOS (£29.88) ☐ plus p&p UK £1, Europe £2, Overseas £3

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We the Disassembled

Is Pyramids upgraded assembler worth crossing the desert for? Pat McDonald investigates.

Pyradev +

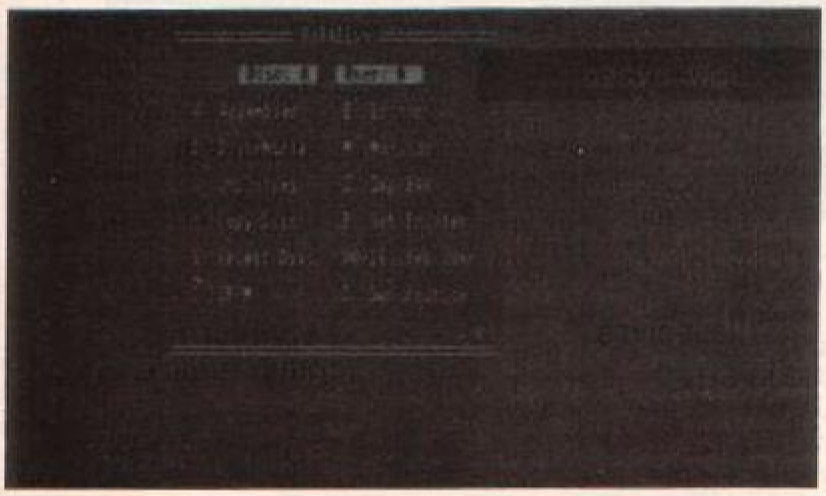
Pyramid, £19.50 CPM+ only

Maxam is, without a doubt, the most popular CPC assembler. *Pyradev* never seemed to get a foothold, being seen as a poor second to *Laser Genius*. Does the plus version alter this arrangement?

Well for a start there is still no ROM version available. This is a shame, but not a crippling deficiency, since disk loading isn't particularly slow.

As with most CPM+ utilities you are advised to begin by making a copy of the master disk to use for software development. The manual also gives directions on producing a turnkey disk to save time, as well as details on changing the default key values.

When *Pyradev+* is finally booted up it presents a system menu listing the overlay programs. These, plus a few comments are:



● The Pyradev+ System Menu

Assembler

This is well up to the standard of today's programs. It processes all of the Z80 instructions at a respectable speed, including all of the unpublished ones. Unfortunately it doesn't understand 8080 opcodes, which are strictly speaking the CPM standard. But I dare say few people will miss them. The features within the Assembly process include various toggles to switch the view and hard-copy options. The program can also be set to produce COM, HEX, REL or BIN (Amsdos) files.

Editor

Some assemblers demand source files to be written using a word-processor such as *Protext* or *Brunword*. *Pyradev+* includes a very good editor for the task. Maximum size for a source file is 48000 characters. Also, the program has a compression option to optimize this figure. In use, it is fast and effective, but it must be borne in mind that it is a line editor, not a word-processor. It is certainly up to the tasks that machine code programmers demand.

Disc Nurse

There are now at least a half-dozen disk utilities on the market for the Amstrad. The overlay program is of a fair standard, being able to cope with format changes between tracks. Reading, editing and writing sectors is easily done. There is also a search option to scan through a disk looking for a particular combination. It can toggle between Ascii and hex for searches and editing. The fact that it is included is welcomed.

Monitor

Two monitors have been thrown in with the package. One appears to be the standard *Pyradev* monitor, and is included purely for Amsdos debugging. The other is a specially commissioned CPM+ monitor. This can perform conditional traps.That is if a byte or register becomes greater, less than, equal to, any combination thereof or not equal to a certain value – then the monitor will step in and allow you to view the program. You can also load a symbol table produced by the assembler and disassemble a program with the correct labels.

Sundries

A few simple features are available from the main menu. They consist of: a Zap Bak routine to get rid of all unwanted backups, a Copy Disc program that is self-explanatory, routines to setup the printer, user number and default drive and an option to put you back to CPM+. There is also a dummy entry that can be configured to run your own routine.

The sharp end

Well, that's the list of features. What is it like to use? How does it perform? Does it look pretty? And similar deep comments.

In use, it does well as a development tool. The assembler has the capability of using control files to select and link different source files, which is a nice touch. In real terms this means source files that can be, in effect, over a hundred kilobytes long.

Most assemblers have a macro function, and *Pyradev+* is no exception. Macros can have real operands or symbolic operands. If you want symbolic ones you must type a list of registers to include when you invoke the macro. For instance:

macro definition:–

```
MACRO1:  POP #REGS1
    LD (#REGS1),A
    INC #REGS1
    PUSH #REGS1
```

When the macro is invoked.

```
    MACRO1 BC
```

This will set up the subprogram:–

```
    POP BC
    LD (BC),A
      INC BC
    PUSH BC
```

Anachronism?

Many Amstrad programmers ignore the potential usage of CPM. It seems that sound and colour graphics capabilities are of overriding importance. What might be better to bear in mind is the huge number of potential users of a program – imagine how an *Elite* type game would sell if available under CPM+.

Macros can be nested. When using labels inside macros the #SYM command must be used to avoid a duplicate label error. But hold on, what do they do? Well, when a macro is invoked the assembler takes the definition and copies it into the source code. This can save an awful lot of typing although the macro's scattered copies still take up memory.

Debugging programs is made much easier with the facility for loading in symbol tables to disassembled files. The monitor lacks certain features which other programs – such as Laser *Genius'* analyser – can boast of. Nonetheless it can handle most tasks with ease and user friendliness.

In short, the whole package represents a good buy for someone looking for a CPM+ development system. At the price there is just no beating it.

GOOD NEWS

- Very large assemblies of source code are possible.
- Conditional traps have been implemented.
- Excellent price.

BAD NEWS

- Monitor lacks the odd feature.
- Amsdos monitor remains the same.

Swift half

Arnor have started a new trend in back-tracking. First Protext became Pocket Protext and now Maxam 2 becomes Maxam 1.5. We get Pat McDonald's reaction to the fraction.

Maxam 1.5

Arnor, £29.95 ROM only

Some years ago now, the assembler *Maxam* was released. It was widely acclaimed and has never been really knocked from the number one spot. Other assemblers have come and gone, but in general none have had the ease of use combined with the power of *Maxam*. Now Arnor themselves have released a new version.

Arnor explain this eccentric behaviour by stating that many people have asked for enhanced features while retaining everything else. Now there is only so much space in a ROM, so how have Arnor reconciled these two requirements?

The answer is they have taken out the most redundant feature – the editor. This was all very well in itself, but couldn't compare to a word-processor. Instead you must prepare your source code with Amsdos *Protext*, which is no great hardship. Except of course that you might need to buy an extra package if you want to use the extra features.

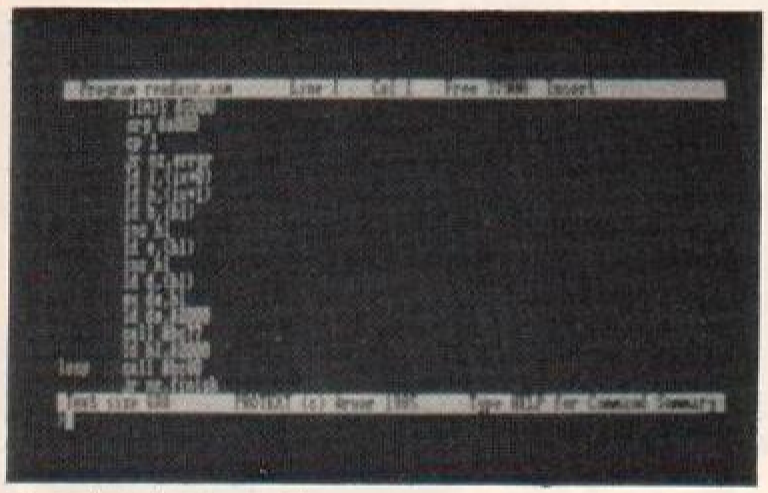
Alternatives

Just to give Maxam 1.5 a fair review, here are some of the competition. *Pyradev*, from Discovery software (Gremlin Graphics carry the name) is a disk based assembler that has the distinction of being able to process huge amounts of source code, and costs £29.95. *Laser Genius* which was available from Ocean is regrettably not being produced any more but boasted an awfully good monitor – keep an eye out for redundant stock. For CPM programmers there is *Pyradev+*, available from Pyramid at £19.50 and reviewed in this issue.

The new commands are separated into three distinct groups:

Debugging: here, the most welcome inclusion is a breakpoint facility. Up to eight breakpoints can be included in the the source file, plus a temporary one which can be placed in at will. Once a breakpoint has been reached execution can either be continued or reference made to the diagnostics. Diagnostic facilities include register information and a dis-assembly of the code where the breakpoint occurred.

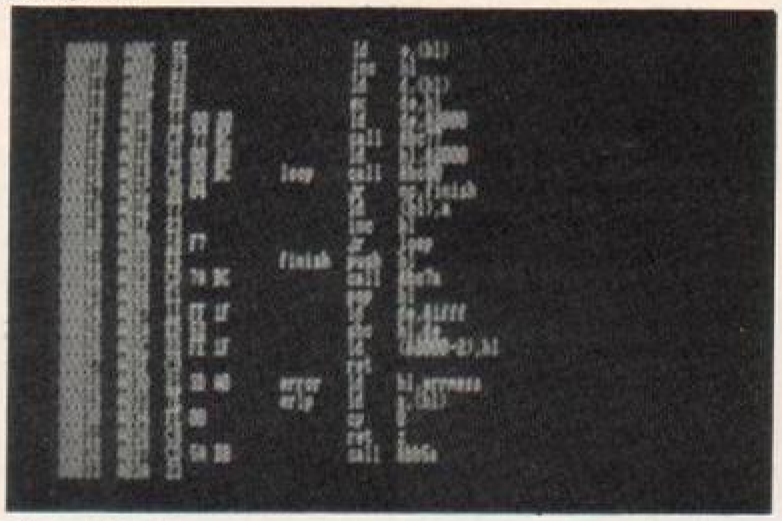
The disassembly features are fairly comprehensive, and it is possible to disassemble code into a file. Viewing it at a later date is easy to achieve by means of *Protext*



●Protext looks after the source file...

External commands: there are a few extra external commands, as well as some enhanced ones. The latter include HELP and ROMOFF. New commands are: MEM, which sets the top of memory in a similar manner to the Basic HIMEM command. LOAD is a very useful command. Again it is similar to a Basic command but can load in Ascii files at a specific address, which is a very useful function indeed. SAVE records a binary file. You can specify all normal parameters plus an extra one – the address at which you want to load the file back in.

HELPR is similar to the Arnor command HELP. Whereas the latter produces a list of Resident System Extensions which are external, i.e. ROM in origin, HELPR lists all the RSX'S which have been loaded from tape or disk. The documentation assures me that the HELP and ROMOFF commands have been improved, but I have yet to discover exactly how.



●Maxam 1.5 takes over.

Assembler directives: there are quite a few of these, so I'll just list a few examples. STR is similar to BYTE and TEXT. It inserts external data into the object code, but sets the eighth bit of the last data item. Thus string length can easily be identified by seeing which item is greater than 128. LIST F will dump the long assembly listing to a file, where it can be perused at length – however, it is possible just to save the list of errors.

In the driving seat

From the list of extra commands it might seem that Arnor really have not done that much. This is definitely a false impression. When you sit done and start to use it you gradually come to appreciate all those little extras.

For instance, the ability of *Maxam* to produce files from within Basic has not only been retained but boosted. The debugging options have been increased, and after a few hours of getting to know the system the experienced *Maxam* user feels comfortably at home.

One or two options have been omitted. These are single stepping through a program and conditional breakpoints. But even without these *Maxam* still manages to claim the accolade of being THE Amstrad assembler. I suspect the reason for this is Arnor's habit of writing utilities aimed specifically at the CPC range.

The bottom line is that *Maxam 1.5* retains the tradition of the top ROM based assembler for the CPC range. At £29.95 it represents a good investment if programming under Amsdos is what you want to do. But don't forget that you'll need both a ROM board and *Protext* as well as *Maxam 1.5*.

GOOD NEWS

- Expands on Maxam with new and improved commands.
- ROM software is instantly available.
- Ability to be used within Protext.

BAD NEWS

- ROM software is expensive.
- Protext necessary to run it.

The Informer

A goldmine of information or a bigmouth? Pat McDonald beats a confession out of the the new display software from Treasure Island

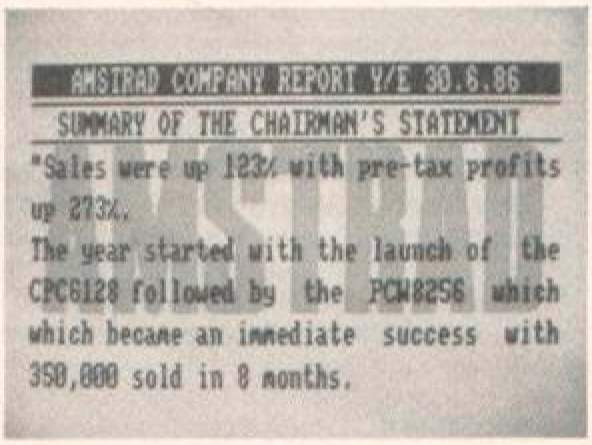
The Informer

Treasure Island Software, £29, disk only

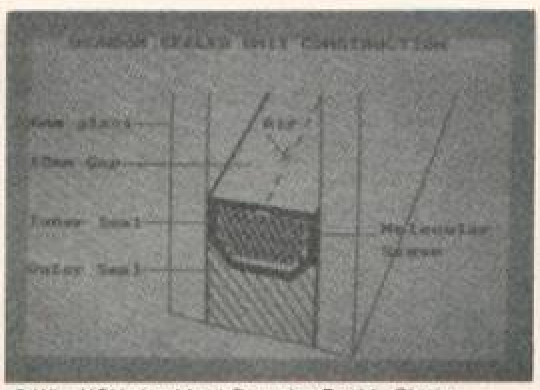
Treasure Island have a track record of innovation and value for money. Their first offering was *Parrotry*, a dynamic art package. *Parrotry Plus* was similar. What does the *Informer* do?

The *Informer's* job is to let whoever uses it produce a slide show of pictures and information. This is useful in three broad areas: education, animated advertising and promotional information.

The program can produce a display from three sources. The first are *Parrotry* screens, which provide an awful lot of colour for a small memory overhead. The second are normal screens, which take up 17k each and so need to be used sparingly. The third are text sequences which can be overlaid on top of illustrations or shown on their own, and which do the actual informing while people are captivated by the pictures.



● Prose straight from Alan Sugar's mouth.



● Why YOU should get Snowdon Double Glazing.

Composition of the final product is as follows: you can have up to 24 *Parrotry* screens, three normal screens, 24 text screens but a grand total of just 48 screens.

To collate, control and show the display there is a suite of programs on the disk. These are Chapter, Chapter2, Sort, Merger, Merged, Converts, Control, Display and the evergreen Bankman, used to control the extra 64k of RAM.

`Batteries not included

To use *Informer* you will probably need *Parrotry Plus* to produce the pictures. Otherwise you will be limited to just three illustrations.

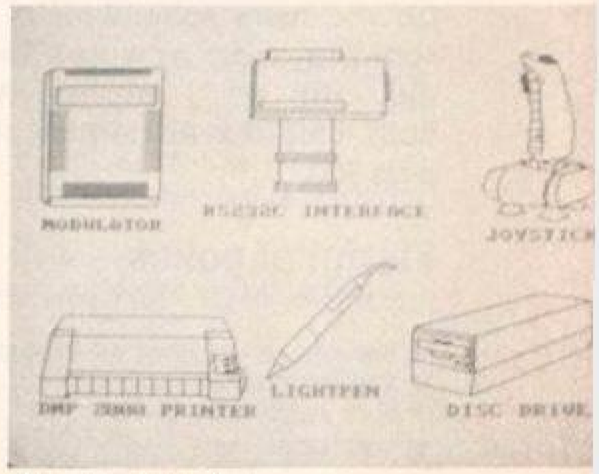
Parrotry Plus works by recording every draw and alteration you make to the screen, and then playing it back. This makes for much more economic memory usage, and hence more pictures can be utilized by the *Informer*. Parrotry Plus can also be obtained from TI and costs £19.95 on disk only.

Setting up of a display file is as follows. First, you must decide just what is being shown – the pictures, text, graphics etc. Second you must input them into the computer. This is what the majority of the programs achieve. Third comes the control section, which determines the order of information. Last comes the real-time display program, which actually shows the finished piece.

Included in the package are two demonstration displays. One is an advertisement for Snowdon Double Glazing. The other is a summary of Amstrad's yearly report for 1986. Both very dry, dull subjects which are surely of little interest. Yet the *Informer* treatment has worked a wonder. Both are watchable and contain an awful lot of information.

It is possible to let the Amstrad run the display on its own, or to use an external source to pause it where needed. This can either be the joystick or the keyboard. Treasure Island can supply a box to do the trick with a ten meter cable for £15.

Pay off



● A brochure for Amstrad

Potential usage of the package is very widespread. Surely the biggest area is in education. The ability to produce tailor made lessons, to change the order and content of a tutorial to a specific curriculum. This could well be a major factor in getting computers into the classroom on a regular basis.

On the other hand people who want to advertise something might find it useful to set up a display. *Informer* certainly can create some eye catching effects. Products which perform similar tasks have been around for years, but they lack the power of this program and generally cost more.

The third usage is really an extension of the second, where you need to convey ideas without selling a particular product. For instance, the demo based on Amstrad's yearly report presents information in a form which the grey matter readily soaks up, rather than pages of boring text broken up with the odd illustration.

The only drawback to this setup is the amount of effort you will have to put in to get a worthwhile result. There may be programs which demand more time and energy but I'm hard put to think of them.

Looking at the reverse of the coin, you get out of the *Informer* something roughly in proportion to what you put in. To produce a lot of high-quality work will take a fair amount of time. Possibly suites of demonstrations might be produced by a third party and sold to *Informer* users – again this would be of particular interest in the educational field.

The documentation for the product is good. Admittedly the print quality is smudged, but the instructions themselves are easy to understand. Packaging is up to scratch, with a smart blue folder enclosing everything.

Overall I think that the *Informer* is one of the most useful programs ever released for the CPC range. The potential for producing educational sequences is huge. May it sell to every 6128 owning teacher in the world.

Treasure Island Software ☎ (0492) 530229
140 Llanwrst Road, Colwyn Bay, Clwyd, LL28 5YL

GOOD NEWS	BAD NEWS
■ Excellent presentation program. ■ Represents real value for money. ■ Tremendous potential for educational and display purposes.	■ You need Parrotry Plus to make full use of it. ■ 6128 only.

HOT TIPS

Do you have special tricks and tactics with serious software and hardware? Send them to Pat McDonald, "Hot Tips", Amstrad Action, 4 Queen Street, Bath, BA1 1EJ. Remember the best tip each month gets £20.

Fistful of pokes

Here is a collection of pokes that might be of interest:

```
1 'Redirect any printed data to screen, e.g. LIST #8
1Ø POKE &BDF1,&C3
2Ø POKE &BDF2,&5A
3Ø POKE &BDF3,&BB
```

```
1 'Display typed returns
1Ø POKE &BDCD,&C9
1 'Cursor off permanently
1Ø POKE &BDCD,&C9
2Ø POKE &BDDØ,&C9
```

```
1 'ESC key off
1Ø POKE &BDEE,&C9
```

Cormac McGaughey, Cushendall

Belt replacement

464 users who have difficulty loading tape games: have you cleaned the heads and pinch roller, twiddled the azimuth and had no result whatsoever? This little trick might sort you out.

After a time, the drive belt of the recorder can stretch. A new one can be obtained for about 8Øp from Maplin Electronic Supplies Ltd, 284 London Road, Westcliff on Sea, Essex. Telephone (Ø7Ø2) 554ØØØ.

This is how you fit it. Turn off the power supply and disconnect everything. Remove the six screws from the keyboard and gently lift the two halves apart. Beware, two sets of wires connect the bottom and top. The job is much easier if you pull off the plug with the least wires. (Ensure you put it back the same way round).

To remove the drive belt you need a small jeweller's screwdriver. The belt runs around three wheels, the largest one is partly covered by a metal plate. This you need to unscrew – be careful not to burr it.

Now gently lift the metal plate just enough to pull out the drive belt. This can be simplified by removing two screws from the small printed circuit board, allowing it to be lifted a little as well.

Once you have fitted the new belt, simply put everything back as it was and give it a try. "Error B" should be dramatically reduced.

Richard Johnson, Essex

Amram 2 Explored

I have discovered various extra commands for *Amram 2* which are not documented in the supplied instructions.

PROBLEM ATTIC

Pat McDonald goes on another problem solving escapade. If your CPC's in danger, if you need help, then perhaps you can contact the AA team.

Upgrade worries

I followed Richard Monteiro's article regarding converting a 464 to a 6128. If I did this would I still be able to run the tapes I have for my 464?

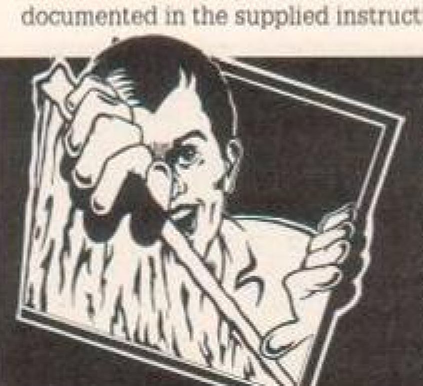
J.S Hazlett, Thornaby

Depends what software you have. A 464 with this modification thinks it's a 6128. Most software is compatible with both, but check to see if it says it's for 464 only anywhere.

I have sent off for the ROM chip upgrade for my 464. I would like to know where to get the information on the extra commands on the 6128. Ideally I wouldn't have to buy a handbook.

M E Anfilogoff, Upminster

Nobody likes buying handbooks, but in this case, unless you have a friend with a 6128, I'm afraid you'll be talking to CPC again, on (0772) 555038.



Sprites Revealed?

This is what I have to say:
My graphics are neat,
But there's just one problem I can't beat: My animation could be good
If my need was understood.
So please help me win this fight,
Tell me how to make a SPRITE.

Duncan Jakeway, Norwich.

Well, any more for a sprites/graphics course? Send me your opinions and ideas. If there's enough interest, then it shall be done...sometime. In the meantime the only sprite generator that we know about as still being available is the Panda Sprite Generator from Interceptor Micros on 073 5671145.

Lonely CPC

I have a Kraft "Maze Master" joystick and CPC6128. When I load up a game, about 5 minutes later the computer behaves as though someone is holding down the CTRL key and hitting others randomly. It doesn't matter what I do, it still happens. Amstrad took 5 weeks to say it might be my joystick. Don't say try it on a friend's CPC – I haven't GOT any friends with CPC's.

Ben Taylor, Gloucestershire.

Okay. Try a different joystick on your Amstrad. If that doesn't solve the problem, get your Amstrad checked out. Analytic Engineering Ltd, (0702) 618455 offer a good service for the CPC's and monitors.

Not so Hot Tip

Your "Machine code character dump" published in the April issue won't work, it just says "Unknown Command". I am no expert at using a computer, but am sure the program has been entered correctly.

A J Ivanov, West Lothian.

Multiface fooled

Anyone who uses *Multiface II* with a 128K memory 664 or 464, will have noticed that the Multiface does not recognize the extra memory. This means you cannot save 128K programs, use the clear banks command or select banks routine. This is because the Multiface checks the ROM of your computer to see which model it is. If it's not a 6128 then the commands cannot be accessed.

When using the toolkit on the multiface press 'T'. Now press the right cursor key 22 times. The number at the address on your screen should be a Ø for a 464, a 1 for a 664 or 2 for the 6128. Simply enter a 2 here, press ESC and the Multiface now thinks you have a 6128 and will even let you save 128K programs.

I have also found a way of accessing the extra memory which is built into the Multiface. By using OUT instructions a 16K block can be paged in at address &ØØØØ. The first &2ØØØ bytes are the Multiface rom and the second &2ØØØ is the ram. Although there is 8K of ram, only the bottom 5.75K of it can be used, the rest tends to get corrupted. The following listing shows how it can be used.

```
ORG &BFØØ
DI
LD BC,&FEEB ; Selects Multiface ram
OUT (C),C
LD HL,&8ØØØ ; Move &17ØØ bytes from
LD DE,&2ØØØ ; &8ØØØ into the Multiface
LD BC,&17ØØ ; ram at &2ØØØ
LDIR
LD BC,&FEEA ; Return to normal ram
OUT (C),C
EI
RET
```

Any data stored in the Multiface ram will survive a normal CTRL-SHIFT-ESC reset and a reset using the Multiface button. Firmware routines can be called from programs within the ram. Also, if the red button is pressed, any data you have stored in the ram will be destroyed.

Peter Featherstone, Leeds

Excellent information on the Multiface, Peter. £2Ø is on the way.

Making sure the Amram disk is in the drive, type in the following:

`MEMORY &8FFF:LOAD "AMRAM.BIN":CALL &9ØØØ`

These commands can be typed in and used in your own programs.

|SAVE,<Filename>,<Start Address>,<Length>,<Entry Point> – this command saves a block of memory to tape or disk.

|LOAD,<Filename>,<Start Address>,<Length> – loads a block of memory from tape or disk.

|READROM,<rom number> – reads a specific rom into buffer. (Buffer addresses are from &4ØØØ to &8ØØØ.)

|WRITE,<rom number> – writes contents of buffer into specified memory.

|SHOW,<address> – prints on screen 16 bytes from the given address in the form of: Address, Hex bytes, Ascii characters.

|SCREEN,<Buffer address> – prints on screen 256 bytes of data in increments of 16 bytes per line from stipulated buffer address. Format is: Address, Hex bytes, Ascii Characters.

|INPUT,<keys allowed>,<template> – waits for stipulated keys to be pressed and limits the number of characters accepted, eg

|INPUT,"123456789Ø","" will only allow input for a two digit number.**

|RESET – resets the computer.

|TYPE,<rom number> – finds the details of specified rom and and stores results at address &8FØØ.

|ROMDIS,<rom number>,<rom number>... – disables specified Roms.

|PARMS – finds parameters.

A K Aspinall, Wakefield

Ah! Yes, you can either get rid of line **89** *or type* **GOTO 90** *after you have run the program.*

Keyboard kapers

My 664 has suddenly decided to ignore certain keys, i.e. Spacebar, large enter, v, comma, fullstop. Could you advise me which chip actually reads the keyboard, and maybe a source of information on how to fix it?

E Lancaster, Abu Dhabi.

Funny, something similar happened to all three of my CPC664's. The sound chip AY-3-8912 actually reads the keyboard, and passes the information on to the 8255. For service manuals, contact CPC (0772) 555038. Alternatively, get your computer repaired. Analytic Engineering Ltd (0702) 618455 (sigh).

Fully packed

I was saving some of Amstrad Action's type-ins when the words "directory full" came up on my screen. So I catalogued my disk to see how much free space I had left, which turned out to be 64K.

Next day, I was typing out another type-in. I saved onto the same disk as last time. Surprisingly it worked. Now I have 56K left. Today I tried to save another program. It wouldn't save. What's happening?

Adam Baird, Harpenden.

Your directory is full, Adam. You can only fit 64 different files at most onto a disk, even if there is enough space for a few more. Erase or copy a couple of the files you don't need off the disk, and carry on.

CPC Weds Dragon?

I want to use a Dragon 32 computer to collect information, and then transfer these datum to my CPC6128.

Is the best way to use two RS232 interfaces, or would it be better to employ opto-isolators feeding an 8-bit input port?

Alternatively, is it possible to persuade the 6128 to read from a cassette with the information recorded on it by the Dragon? It's the easiest to use, but the hardest to actually get working, I suppose.

P Hampson, Norfolk.

You are quite right, Mr. Hampson. The standard method of acheiving a protocol would be to use RS232 interfaces. The other methods you mention, while being perfectly feasible, are trickier to accomplish in practice.

References necessary

I have bought a DDI1 disk drive. With this came a CPM 2.2 utility disk. Would you have any information or recommend any books which would help me to understand how to use it?

R M Smith, Chatham

I've yet to find a really excellent tutorial on CPM, but "An Introduction to CPM" by RA Penfold, is quite simple to understand. It costs £2.95, ISBN 0-85934-157-7 and is published by Bernard Babani.

Design dilemma

I would like some advice about software. Will *Micro Design* from Siren Software work with *Tasword 6128*? Will it look as good as Rainbird *Advanced Art Studio*? *Tasword 6128* and *Protext*: which can print different fonts on the same page?

M Shai'Puddin, Dundee

Micro Design will not work with any wordprocessor. It can produce a similar quality picture to the Art Studio, but Art Studio is easier to use and has more features.

Either Tasword or Protext will select different printer fonts if you use Qualitas from Severn Stars Publishing with them. Seven Stars are on (06284) 3445.

Comsoft

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AMSTRAD CPC EDUCATION SOFTWARE

Details of Goods		Cass R.R.P	Our Price	Disc R.R.P	Our Price
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'Answer Back Junior Quiz	Kosmos	9.95	8.96	13.95	12.56
Better Maths (12-16)	School Software	9.95	8.96	14.95	13.46
Better Spelling (9-14)	School Software	9.95	8.96	14.95	13.46
Biology (12-16)	School Software	9.95	8.96	14.95	13.46
Chemistry (12-16)	School Software	9.95	8.96	14.95	13.46
Factfile 500	Kosmos	4.95	4.46	8.95	8.06
Fun School5 8's	Database	5.95	5.36	8.95	8.06
Fun School 8-12's	Database	5.95	5.36	8.95	8.06
Fun School under 5's	Database	5.95	5.36	8.95	8.06
Geography Quiz (10-)	School Software	9.95	8.96	14.95	13.46
Happy Letters	Bourne Education	9.95	8.96	14.95	13.46
Happy Numbers	Bourne Education	9.95	8.96	14.95	13.46
Happy Writing	Bourne Education	9.95	8.96	14.95	13.46
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Maths Mania (8-12)	School Software	9.95	8.96	14.95	13.46
Maxi Maths (9-14)	School Software	9.95	8.96	14.95	13.46
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The French Mistress	Kosmos	16.95	15.26	19.95	17.96
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The Italian Tutor	Kosmos	16.95	15.26	19.95	17.96
The Spanish Tutor	Kosmos	16.95	15.26	19.95	17.96
Weather/Climate(12-17	Schools Software	9.95	8.96	14.95	13.46
Wordhang	Bourne Education	9.95	8.96	14.95	13.46
World Wise	Bourne Education	9.95	8.96	14.95	13.46

AMSTRAD CPC UTILITIES

Details of Goods		Cass R.R.P	Our Price	Disc R.R.P	Our Price
256K Memory Expansion 464/664	Ram Electronics	–	0.00	99.95	89.96
256K Memory Expansion 6128	Ram Electronics	–	0.00	99.95	89.96
256K Silicon Disc 464/664	Ram Electronics	–	0.00	99.95	89.96
256K Silicon Disc 6128	Ram Electronics	–	0.00	99.95	89.96
64K Memory Expansion 464/664	Ram Electronics	–	0.00	44.95	40.46
Advanced Art Studio	Rainbird	–	0.00	24.95	22.46
Advanced Music Stystem	Rainbird	–	0.00	29.95	26.96
AMX Mouse + Art + op System	A.M.X	69.99	62.99	69.99	62.99
AMX Mouse + Stop Press	A.M.X	–	0.00	79.99	71.99
AMX Stop Press Software	A.M.X	–	0.00	49.99	44.99
Asimuth Head Alignment kit	Interceptor	8.99	8.09	–	0.00
Aztec C Prime	Hisoft	–	0.00	79.95	71.96
Bonzo Blitz	Nemesis	–	0.00	12.50	11.25
Bonzo Doo Dah	Nemesis	–	0.00	12.50	11.25
Bonzo Meddler & Hackpack	Nemesis	–	0.00	12.50	11.25
C Basic Compiler	Digital Research	–	0.00	49.95	44.96
C The Language	Hisoft	–	0.00	34.95	31.46
Cherry Paint	Siren Software	–	0.00	9.99	8.99
Colour Monitor TV Receiver CPC	Ram Electronics	–	0.00	69.95	62.96
CPC Firmware Guide (Book)	Amsoft	–	0.00	19.95	19.95
Cracker II	Newstar	–	0.00	49.00	44.10
Crah Course In typing	Iansyst	–	0.00	24.95	22.46
Database Manager	Advance	–	0.00	29.95	26.96
DBase II	Ist Software	–	0.00	99.95	89.96
DDI-1 Firmware Guide (Book)	Amsoft	–	0.00	9.95	9.95
Dev Pac 80	Hisoft	–	0.00	39.95	35.96
Devpac assy/Dissassa	Hisoft	24.95	22.46	–	0.00
Disc Wizard	Evesham Micros	–	0.00	34.95	31.46
Discovery Plus	Siren Software	–	0.00	14.95	13.46
Dr Draw (6128)	Digital Research	–	0.00	49.95	44.96
Dr Graph	Digital Research	–	0.00	49.95	44.96
Extra Extra	A.M.X	24.95	22.46	24.99	22.46
Font 64	Hisoft	–	0.00	12.95	11.66
FTL Modula-2	Hisoft	–	0.00	54.95	49.46
Knife	Hisoft	–	0.00	12.95	11.66
Light Pen & Graphics 6128	Electric Studio		0.00	29.95	26.96
Light Pen 464	Electric Studio	19.95	17.96	–	0.00
LightPen 464/664 (Cass)	Ram Electronics	19.95	17.96	–	0.00
Lightpen 464/664 (Rom)	Ram Elecronics	–	0.00	29.95	26.96
Lightpen 6128 (rom)	Ram Electronics	–	0.00	29.95	26.96
Mastercalc 128	Campbell	–	0.00	33.00	29.70
Masterfile 3	Campbell	–	0.00	39.95	35.96
Matrix Spreadsheet+	Audiogenic	–	0.00	34.95	31.46
Max	A.M.X	–	0.00	19.95	17.96
Maxam	Arnor	19.95	17.96	26.95	24.26
Maxam (Eprom)	Arnor	–	0.00	39.95	35.96
Micropen	Amsoft	–	0.00	49.00	44.10
Mini Office II	Database	14.95	13.46	19.95	17.96
Model Universe	Arnor	–	0.00	19.95	17.96
Modem V21/23 Amstrad/ Pace	Pace Micro Tech	–	0.00	99.95	89.96
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OCP Art Studio	Rainbird	–	0.00	19.95	17.96
Pascal 80	Hisoft	–	0.00	39.95	35.96
Pascal MT+	Digital Research	–	0.00	49.95	44.96
Plan-It	Database	14.96	13.46	19.95	17.96
Pocket Wordstar	Micro Pro	–	0.00	49.95	44.96
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Print Master	Siren Software	–	0.00	14.99	13.49
Printer Cable 1m Long	Ram Electronics	–	0.00	12.95	11.66
Promerge	Arnor	–	0.00	24.95	22.46
Promerge Plus (Eprom)	Arnor	–	0.00	34.95	31.46
Prospell	Arnor	–	0.00	24.95	22.46
Prospell (Eprom)	Arnor	–	0.00	34.95	31.46
Protext	Arnor	19.95	17.96	26.95	24.26
Protext (Eprom)	Arnor	–	0.00	39.95	35.96
Ram Music Machne	Ram Electronics	49.95	44.96	59.95	53.96
Retrieve Database	Sagesoft	–	0.006999		62.99
Rombo Rombox	Arnor	–	0.00	34.95	31.46
Speech	Superior	–	0.00	14.95	13.46
Speech Synth 464/664 (Cass)	Ram Electronics	39.95	35.96	–	0.00
Speech Synth 464/664 (Rom)	Ram Electronics	–	0.00	44.95	40.46
Speech Synth 6128 (Rom)	Ram Electronics	–	0.00	44.95	40.46
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Tasprint	Tasman	–	0.00	12.95	11.66
Tasprint 464	Tasman	9.90	8.91	–	0.00
Taspell	Tasman	–	0.00	16.50	14.85
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M.of Universe (Movie)	9.99	8.99	14.99	13.49
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Paperboy	8.95	8.06	14.95	13.46
Pawn	–	0.00	19.95	17.96
Pegasus Bridge	12.95	11.66	17.95	16.16
Phantom Club	8.95	8.06	14.95	13.46
Planetfall	–	0.00	24.99	22.49
Platoon	9.95	8.96	14.95	13.46
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President	–	0.00	7.99	7.19
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Psycho soldier	8.95	8.06	14.99	13.49
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Revenge of Doh	8.95	8.06	14.95	13.46
Road Runner	9.99	8.99	14.99	13.49
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Rygar	9.99	8.99	14.99	13.49
Saboteur 2	7.95	7.16	11.95	10.76
Sapiens	9.99	8.99	–	0.00
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Scrabble	9.95	8.96	14.95	13.46
Scruples	9.95	8.96	14.95	13.46
Sentinel	9.95	8.96	14.95	13.46
September	9.95	8.96	14.95	13.46
Side Walk	9.95	8.96	14.95	13.46
Sidearms	9.99	8.99	14.99	13.49
Silent Service	9.95	8.96	14.95	13.46
Silicon Dreams	14.95	13.46	19.95	17.96
Slap Fight	8.96	8.06	14.95	13.46
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Sorcerer Lord	12.95	11.66	17.95	16.16
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Ten Great Games 2	9.99	8.99	–	0.00
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They Sold A Million 3	9.95	8.96	14.95	13.46
Three Bears	–	0.00	19.95	17.96
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Trivial Young Edit	14.95	13.46	19.95	17.96
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Bar CPM

From freebies to fully-priced, Richard Monteiro gets to grips with the delights of CPM software

There are many CPM applications for the PCW series of computers that will work, with little or no modification, on CPC machines running CPM Plus. It is highly unlikely that any PCW product will work under CPM 2.2. At worst, the PCW disk may be formatted in such a way that an ordinary CPC machine can't read the disk. Of course, there are some programs that just won't run on a CPC – these usually rely on the fact that PCW's have huge 256k or 512k memories.

Assuming you have got hold of some PCW software, the first thing to do is check that there is some remote possibility of running the stuff. Here's how. Pop the disk, holding the program you wish to check, in the drive and type **CAT** followed by a stab of the return (enter) key. This is done from Amsdos (the native Amstrad disk operating system). If you can't tolerate the thought of working in this environment then catalogue the disk from CPM: **DIR** followed by return will do the trick. One of two things will happen: a directory of the disk will be displayed or you will get the message **Drive A: read fail. Retry, Ignore or Cancel?** (**bad format - Retry, Ignore or Cancel?** if working from CPM Plus).

```
5 PRINT"Insert CPM work disk into drive A"
10 CALL &BB18:OPENOUT "readpcw.com"
20 FOR t=0 TO 28:READ a$:v=VAL("&"+a$)
30 PRINT #9,CHR$(v);:NEXT:CLOSEOUT
40 DATA 0e,1f,cd,05,00,06,00,0e,05,09,36
50 DATA ae,3e,01,0e,08,09,77,0e,07,09,77
60 DATA 0e,06,09,77,c3,00,00
```

If you got a directory listing then skip the next two paragraphs. Assuming the disk you placed in your drive isn't blank (unformatted) or corrupted, then it is probably formatted to PCW specification. The PCW can format disks in two ways – one is identical to the data format of CPC machines and the other... well, let's just say that the CPC can't normally read it and nobody is sure why Amstrad opted for it.



Advantage (0242 224340) have a useful PD file, PCW.COM, that enables the CPC to read PCW formatted disks. In addition the program makes it possible to copy files from PCW format to data format. That's one way round the problem. The other is to type the listing into the computer and run it. When prompted place your CPM work disk in drive A. The listing saves a file called READPCW.COM onto your disk. Simply enter **B:** at the **A>** prompt, follow the on-screen instructions and insert your system work disk and then type **READPCW** at the **B>** prompt. Whenever you are at the **B>** prompt you will be able to read and write PCW disks, the **A>** prompt still works as usual. Using PIP it will be fairly easy to transfer files from PCW format to data format.

You've managed a directory listing. What next? If some of the .COM files are excessively large (over 70k) then don't bother continuing. The TPA (transient program area or free memory) under CPM Plus is roughly 61k.

Apart from that there is nothing to stop you from trying any program. Common problems include screen and keyboard handling: the PCW screen is larger (90 columns by 30 rows) than that of the CPC and the PCW has several keys that simply don't exist on the CPC. Note that commercial PCW games won't work on the CPC, as these often bypass CPM and access machine-specific hardware. Do let us know how you get on with PCW software. Specific packages will need patches – more on those and other hints next month.

Where to go

If you want to get hold of public domain software, there are several sources which may be of interest:

Advantage ☎ 0242 224340
West One House, St Georges Rd, Cheltenham, GL50 3DT
CPM User Group
72 Mill Road, Hawley, Dartford, Kent, DA2 7RZ
PD Software ☎ 08926 63298
Winscombe House, Beacon Road, Crowborough, East Sussex, TN6 1UL
Triple Zero Services
23 broad Lane, Essington, Nr Wolverhampton, Staffordshire, WV11 2RG
PD-SIG
90 Braybourne Close, Uxbridge, Middlesex, UB8 1UJ

Most of these firms publish a newsletter and have vast software libraries, not all will be of interest to you. There is usually a subscription and copying fee for each disk. Do remember to enclose a SAE when enquiring.

User clubs are also a good place for getting public domain. Wacci (01 898 1090) in particular have a selection of disks crammed with stuff. Well worth checking.

The United Amstrad User Group offer free PD software to club members – free PD software? But surely it's free anyway? Yes, but most libraries charge a handling fee. To enrol as a UAUG member you must send £5 to 1 Magnolia Close, Fareham, Hants, PO14 1PX. For this you get a bi-monthly magazine and access to 2 megabytes of PD software. Enquiries on 0329 281324.

If you have a modem, you can download software from bulletin boards. Try 0462 700644 at any time.

Before you order disks and disks full of PD software, you might like to try getting your hands on *The Free Software Handbook*. This book published by PeopleTalk Associates covers the best public domain software available. It is updated every year. Its ISSN number is 0742-048X.

We shall continue to update this list, so if you know of any worthwhile libraries, bulletin boards or user clubs, do get in touch.

Tricks and tactics

CPM can be prove to be a cumbersome beast at the best of times, that's why any hints on using software or the operating system itself are very welcome. If you have any gems that you think will interest a lot of other enthusiasts, do get in touch.

Cormac McGaughey of Cushendall in Co Antrim has some tips for those with public domain software that has little or no documentation, and that refuses to work or whose function is unclear:

1. Search for .DOC or .ASC files and use TYPE followed by the filename. For instance, TYPE filename.DOC <return>.
2. Try dumping the .COM file to see if any text is held within the program.
3. Use GENCOM to load .RSX files.
4. If the program crashes or throws out garbage, and you're using CPM Plus, try CPM 2.2.
5. The filename may hide the program's function. For example, RASMB stands for Reverse ASseMBler.

ACTION TEST

Hewson have managed to rack up their second Mastergame in as many months, with the outstanding game Nebulus. You'll just love the revolving towers and wickedly addictive action.

Fans of the old classic Impossible Mission will also be delighted with the sequel. The graphics and gameplay have both been improved.

We've also got the third of the Mask games, Charlie Chaplin, Pink Panther and more.

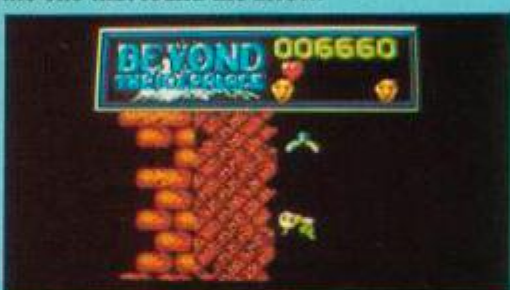
BEYOND THE ICE PALACE

Elite, £8.95 cass, £14.95 disk, joystick or keys



●Watch out for the ogre

The forces of evil have been doing naughty things again in the lands Beyond the Ice Palace. They've been burning down trees and doing all sorts of other mischief that really gets on the woodcutters nerves. It was decided that a magic arrow would be shot into the air and the person who found it would undertake the dangerous mission of resetting the balance between good and evil. You must have enemies in high places because you're the one that found the arrow.



●Another life lost in the lift shaft

Fans of *Ghosts and Goblins* will immediately recognise the format of the game, in many ways the games are similar. You charge around a four way scrolling playing area viewed in 2D, hurling an assortment of weapons at the assembled evil forces. Above the playing area is a panel where your score, lives and number of spirits are displayed.

SECOND OPINION

The action is fast and furious – just what's needed in an arcade derivative. You can't exactly say it's got originality or gameplay you haven't encountered before. What it has got is very slick presentation, well worked graphics and a lot of challenge. My only gripe is the dreadfully slow loading system from tape that Elite insist on using. There's absolutely no reason why they shouldn't have something at least twice as fast and just as reliable. Other than that it's an addictive and demanding game. **BW**

GREEN SCREEN VIEW

No problems playing in green.

The Verdict

GRAPHICS 73%
- Smooth four way scrolling.
- Colourful and well animated sprites.

SONICS 39%
- Average quality sound effects and no tunes.

GRAB FACTOR 78%
- Choose your weapon and destroy evil.
- Irritating how you can very easily lose lives in unavoidable situations.

STAYING POWER 74%
- Plenty of levels to fight your way through.
- Frustration may outweigh addiction in the long term.

AA RATING 77%

A fun run-and-blast game that should keep you occupied.

On the first screen you have a choice of three weapons to pick up, the mace is the most useful for baddie bashing and the dagger is fairly useless. Jump down the hole to your left and the adventure begins. If you're lucky you won't lose a life doing this, but often you'll land on a bat and lose one of your nine lives. A very irritating start to a game. From then on you run, jump, climb and fall around the complex of tunnels and shafts, killing anything that gets in your way.



●A choice of three weapons: dagger, mace or sword

There are a multitude of hostile inhabitants: bats, ogre like beings, demons and dragons to name a few. Bats hover around you trying to sink their sharp little teeth into you, one hit is enough to finish them off. The ogres carry large axes that they throw in your direction, but they too take a single hit to kill. Demons materialize out of thin air and they take several hits before they're despatched. The dragons need to be hit in every section of their body before they stop coming after you.

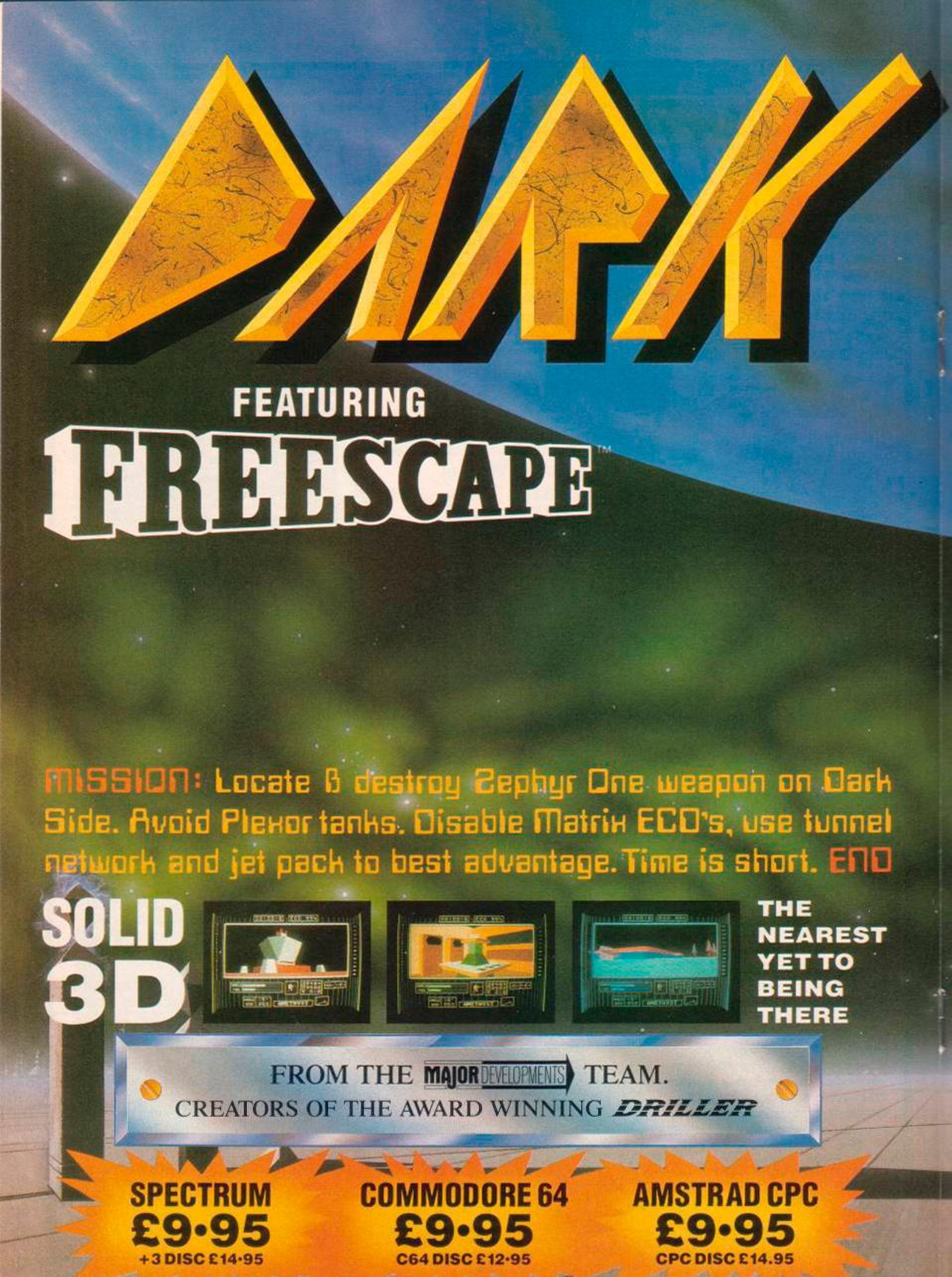
You do have one more thing that you can do to aid you in your quest and that is to summon a spirit. The spirit is large golden head that appears at the top of the screen. It moves from left to right as it moves towards the bottom of the screen and destroys anything that it hits, except for you of course. Spare spirits can be picked up as you travel through the game.

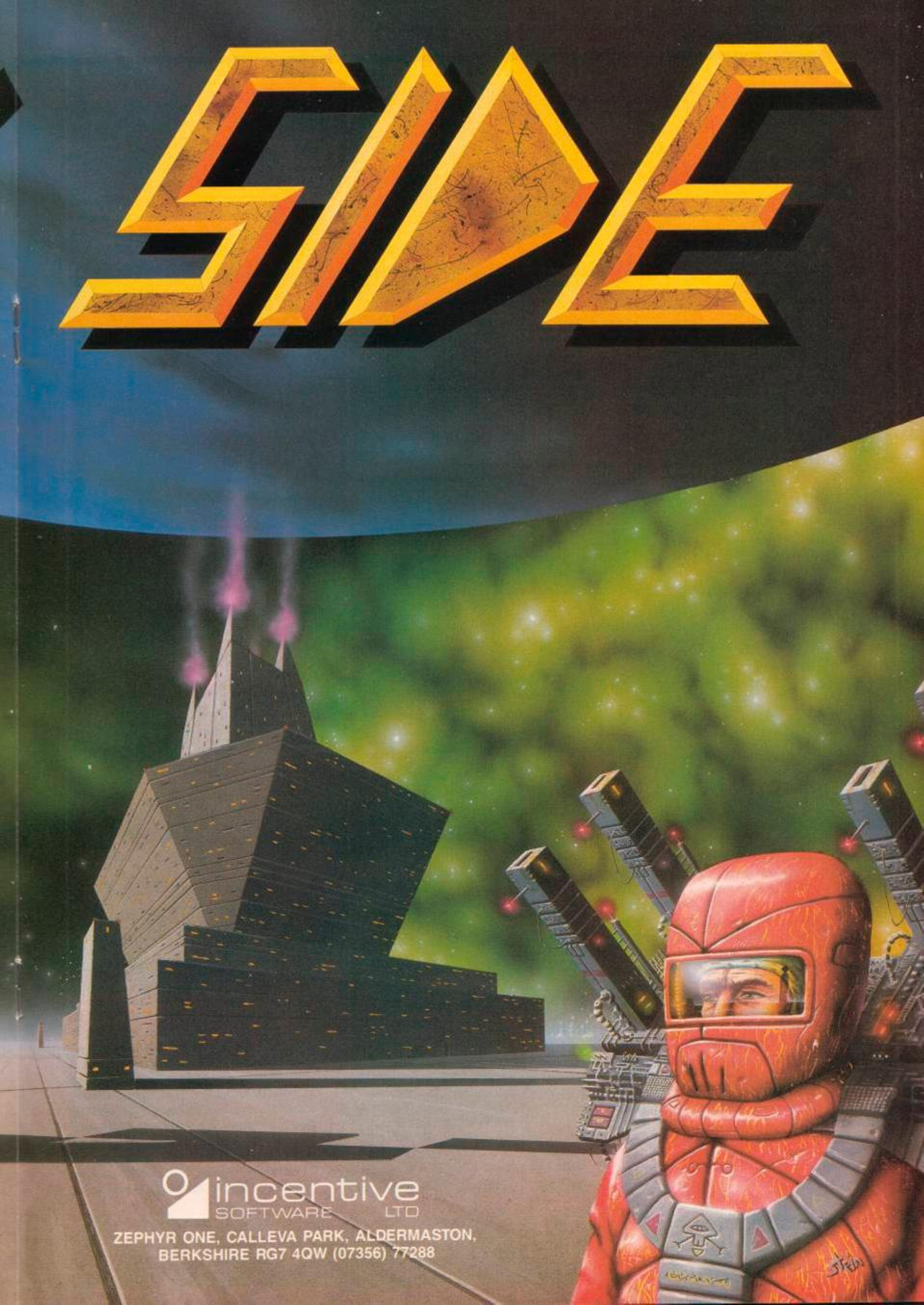
There are no tunes in the game or on the title screen and sound effects within the game are not particularly good. The four way scrolling of the screen is smooth and fast. Animation of the sprites is slick and flicker free. Colour is used very well throughout the game.

Apart from the difficulty level being set a little to high this is an fun arcade game. Some of the stages are very frustrating to get past, the lift shaft in particular can be very tricky. But you can have plenty of fun hacking and slaying anything that gets in your way. **GBH**

FIRST DAY TARGET SCORE

10,000 points


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NEBULUS

Hewson/Gremlin, £9.99 cass, £14.99 disk, joystick or keys

Some nasty horrible people have been building huge towers in the sea of the planet Nebulus. You've been volunteered to go and demolish the towers because they spoil the view. Not surprisingly the occupants object strongly to you bringing their new homes crashing down into the sea, so resistance to your mission is inevitable. To Nebulus you go, complete with the Mk 7 mini-sub.

The screen shows a side on view of the tower that you are to demolish with you, the little green Pogo, in the centre of the screen. At the top of the screen is a status panel that informs you of how many lives you have, your score and the amount of time that you have left to complete the tower.

To demolish a tower you need to climb to the top and enter the last door. Sounds simple enough, but what I've neglected to mention is the way that you have to reach the top. Climbing up the tower involves you walking, jumping and falling from one place to another. As you move left or right the tower rotates smoothly behind you leaving you stationary in the centre of the screen. If you go up or down then the tower scrolls in the appropriate direction to give the impression of ascent or descent.



Red balls be destroyed with snowballs

Black balls can only be stunned

Doorways lead to the opposite side of the tower

Each tower has own type of occupant, this time they're eyes

Lifts can take you up or down the building



●Another tower completed

To aid, or hinder, you in your climb there are several different kinds of ledge that you can step on. They are: normal ledges, disintegrating ledges and slippery ledges. Normal ledges are the nice kind of reliable block that you will stay there and do nothing other than support you. Disintegrating ledges on the other hand disappear as soon as you step on them. Slippery ledges force you to move left or right, depending on the particular ledge. All of the three previous ledges look identical.

There are also doorways into the tower and lifts. Lifts are used to rapidly move you up or down the tower and doorways take you through to the other side of the building – but you won't be able to see what awaits you there. The ledges are often linked into staircase like structures to aid your ascent. There are also some little flashing blocks that stop you from going in certain places and stop some of the lifts from working. The blocks can be removed by hurling a snowball at them.

The inhabitants of the tower come in four main types: killable, stunable, indestructible and homers. The killable aliens are red ball like objects that bounce around the tower, a well placed snowball will dispatch them.

SECOND OPINION

It's not often that someone comes up with an original concept for a game but a platform game set on revolving towers fits the bill wonderfully. The puzzles and traps that lie in wait have been constructed to test the players mind and reflexes. There are lateral thinking problems where you don't have to do anything but allow one of the aliens to do something to you – I won't reveal more than that. Such devious problems make this stand out from the crowd – the design, programming and gameplay are all of outstandingly high quality. **BW**

GREEN SCREEN VIEW

The only problems that you'll have in green is of the mental variety, the game is just as easy to play as it is in colour.



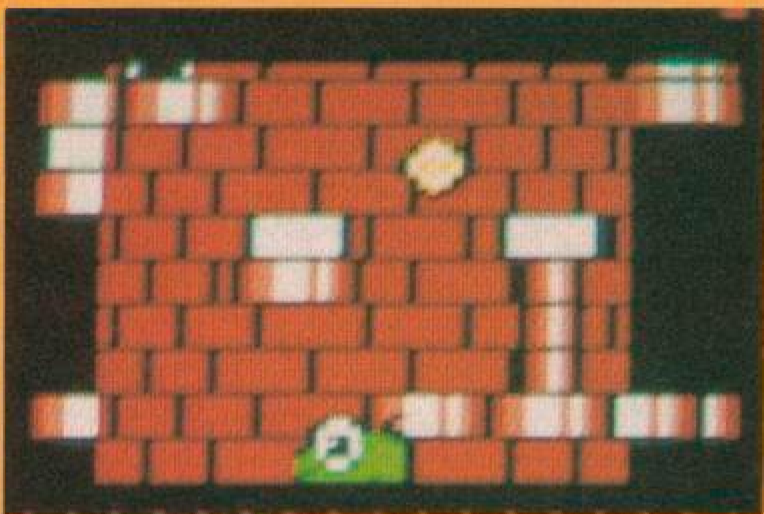
The black balls can be stunned with a snowball, but they still push you if you bump into them while they're stunned. The indestructible aliens vary from tower to tower, but they all have to be avoided. The homers are red aliens that appear periodically from either side of the screen. They come on at the same level as you are on the tower and travel straight across to the other side. They can't be killed and so you have to change level before it reaches you, or you can go through a

MASTER GAME

door to avoid it.

If you collide with an alien then you get pushed off the ledge. If you just fall onto another ledge then all you lose is time in climbing back up again, but if you fall into the sea you lose a life because the one thing you can't do is swim – although you do sink with exceptional style.

When you finally reach the top of the tower you get a bonus according to how stylishly and quickly you completed the tower and you get to sea the tower fall into the sea. I hope the fish don't mind all the rubble! It's off to the next tower then and you won't be in the least bit surprised to find that things start to get more difficult. There's only one small criticism I have, that the sequence where you are awarded bonus points after destroying a tower is slow and boring to watch.





●Pogo returns to his submarine after a job well done

Pogo is a cute and beautifully animated little green monster and the rest of sprites are done excellently too. The rotation of the tower is done very smoothly and so is the vertical scrolling. A pleasant tune plays throughout the game and the sound effects are of a similar high standard. Sound and/or music can be switched off if you want to.

The concept is very simple, it's still basically only a platform game, but the frustration element of the multitude of puzzles keeps you interested. Some of the puzzles are really difficult to accomplish, they're not impossible, but they do take a lot of practice. This is the most original and playable platform game for a long time. It's bound to provide immense enjoyment and challenge.
GBH

FIRST DAY TARGET SCORE
Complete three towers

The Verdict

GRAPHICS 92%
- Smooth rotation of the tower.
- Colourful and well animated sprites.

SONICS 76%
- Above average tune plays throughout the game.
- Lots of cute sound effects too.

GRAB FACTOR 94%
- You'll be hooked within seconds of starting to play.
- Frustratingly addictive action.

STAYING POWER 90%
- Lots of towers to demolish.
- Problems get progressively more difficult.

AA RATING 93%
- Hewson have done it again, with a game of problem solving and fiendish action to keep you playing for months.



●Pogo goes drowning



●Just go through that final door and the demolition will begin

RAVE

IMPOSSIBLE MISSION II

US Gold/Epyx, £9.99 cass, £14.99 disk, joystick only

Elvin Atombender is back to bring death and destruction to the world. A very large missile is due to be launched in three hours time and anything in the vicinity of the planet earth will die. Since there are no scheduled flights off the planet for a while you're left with no choice, but to be heroic and save the world.

Initially it looks very similar to its predecessor, *Impossible Mission*. There's a side on view of elevators and robot infested rooms. However, the game has been changed considerably so that it provides new challenges to veteran *Impossible Mission* players.

Elvin's lair is made up of many towers that each have several rooms. The rooms contain a mixed assortment of furniture and plenty of hostile robots that work for Elvin. Searching the furniture will provide one of the following: a number, a bomb, a command icon or nothing. The numbers are used to crack the security codes of the building, a three digit code is needed to enter a tower. Command icons come in several varieties: robot off, reset lift, move floor or extra time.





●Part of the three digit code has been cracked

Surprisingly enough the robot off command temporarily deactivates all of the robots and the reset lift option puts all of the lifts back in their startup positions. Some parts of rooms can slide horizontally and they're moved with the move floor icon. Extra time extends the amount of time that you have to complete the game. There are two types of bomb: normal and time. The former is used to blast open a safe and the latter to blow holes in the floor. Inside the safe

VENOM STRIKES BACK

Gremlin, £9.99 cass, £14.99 disk, joystick or keys

The sinister forces of Venom are again up to mischief, they've kidnapped Matt Trakker's son, Scott. Unless Matt leaves Mask for ever then he'll never see Scott again. With Matt out of the way Venom will be able to eradicate Mask and take over the world. Matt is left with no choice, he must rescue Scott.





You are presented with a 2D view of the lunar surface that flicks to a new screen when you go off the edges, in a similar way to *Exolon*. On your journey to rescue your son from the clutches of Venom you will encounter the defences of the moonbase.

When play begins you are unarmed, fortunately there are two Masks on the start screen that you can pick up: Penetrator and Backlash. Penetrator allow you to pass through objects unharmed that would normally drain your energy supply considerably. Backlash is a gun that you can use to blast anything that Venom throw at you. Later on you'll find Jack Rabbit which is a jetpack that's also capable of firing, but it's not as powerful as Backlash.



●Matt stands at the end of a bridge

you will find a tape recording, more of that later.

Inside the rooms you will also find Elvin's robots which come in six different forms: sentrybots, minebots, pestbots, squatbots, bashbot and suicidebots. Sentrybots are armed with high voltage plasma guns that fry you if you're hit. They aren't very manoeuverable though, so they can be somersaulted

SECOND OPINION

The original wasn't terribly well converted to the Amstrad, but this is a much better effort. The gameplay is as addictive as ever – somersaulting everywhere, timing problems, devious robots and lots of puzzling. I actually preferred the puzzles in the original but these are still worthwhile. I don't think this will ever have quite the same aura about it as the original had, but it's a cracking good game anyway. **BW**

GREEN SCREEN VIEW

Just as easy to play in green as it is in colour.

over quite easily. Minebots wander around leaving little messages all over the place, if you step on one of their explosive deposits you'll get blown up.

In most rooms there are lifts and the cute little pestbots have the annoying habit of playing on the lifts that you've so carefully positioned. Squatbots are small spring loaded robots that you can use to propel yourself

The Verdict

GRAPHICS 76%
- □ Colourful scenery and sprites.
- ■ The characters are a little small.

SONICS 34%
- ■ Very simple effects and no tunes.

GRAB FACTOR 86%
- □ Once you've grasped what to do it's great fun to play.
- □ The mixture of searching and puzzling is just right.

STAYING POWER 85%
- □ Plenty of towers to complete and defeating Elvin will take quite a while.
- ■ After a few games you may get bored doing the same thing over and over.

AA RATING 85%
- □ A worthy follow up to *Impossible Mission*

upwards in an extra large leap. Stand on them too long though and they'll bash you into the roof. The bulldozer like bashbots will grab you and then shove you off the edge of a platform, which can be fatal. The suicidebots leaps to it's death and tries to take you with it.

In the corridor and lift section you just run around trying to find rooms. During this part of the game you can try and crack the code to enter another tower, or play back any recordings that you've made. The recordings are needed to get into Elvin's central tower, you're main objective. Once in the central tower you have to find the right terminal in Elvin's control room and deactivate the missile.

Sound is limited to running, jumping and dying and there are no tunes. The graphics are colourful and well animated, but they're nothing spectacular.

There are some very mean problems to solve in this and lots of towers to go through. There's little variation in playing style from room to room and tower to tower, but the problems do get tougher. If you liked *Impossible Mission* then you'll love this and if you didn't then give this a look anyway. One final thing, it's a multi-load game. **GBH**

FIRST DAY TARGET SCORE
Complete tower one.

Only one of the Masks can be active at any one time and they are all charged. Initially they have 99 charges, but they are depleted every time you use them. They must be used with care because some things can only be negotiated with one of the Masks.

SECOND OPINION

The Green Beret, Exolon type format of game has become very popular just recently. This is another very creditable attempt that has plenty of variety in the features. The different weapons are entertaining and the Venom forces provide lots of challenges. Not exactly a mould-breaker but bags of entertainment value. **BW**

GREEN SCREEN VIEW

No particular difficulties.

As you travel across the landscape you will encounter a mixture of Venom forces. Stationary guns, mines, water, extending bridges, flying craft or ground dwelling creatures will all try and kill you. The guns can drain you slowly of energy until you run out – ending the game. Mines cause you severe damage when you hit them, but like the guns they can be avoided with Penetrator. Jumping or flying over them is another way of bypassing them.

Water may not appear to be a problem, but if you fall in it then you'll sink to the bottom and never be heard of again. Extending bridges appear in some locations. They are over water and you have to determine the timing so that you can reach the far side of the bridge. The timing is fairly easy to work out, so the bridges should not prove much trouble. Flying and ground dwelling things will drain your energy if you hit them and so they must be shot or avoided.

The Verdict

GRAPHICS 79%
- □ Smooth and flicker free animation.
- □ Colourful backgrounds and sprites.

SONICS 68%
- □ Happy little title tune.
- ■ Good effects, but not enough of them.

GRAB FACTOR 85%
- □ Pick up a joystick and blast away to your hearts content.
- ■ Initial play gives the impression that there is very little depth to the game.

STAYING POWER 77%
- □ Careful use of Masks is needed, and this makes it more challenging.
- □ Scott won't be rescued for a long time.

AA RATING 81%
- □ After the last Mask game I had my doubts about the series, but this one has given me back some hope for it.

A very nice tune plays on the title screen and there's another that you'll hear quite a lot initially – the death tune. There aren't many different sound effects, but the ones that there are are above average. The backgrounds and sprites all have good use of colour. Animation is smooth and flicker free.

This is the third in the Mask series of games and I found it to be the most enjoyable of the three. The objectives are not very complicated and the scenario is not exactly original, but you do get the "just one more go and I'll get past that screen" feeling. Grab a joystick and blast the forces of Venom, I'm sure that they'll recover and come back in another game. **GBH**

FIRST DAY TARGET SCORE
15,000 points

BRAVESTARR

GO, £9.99 cass, £14.99 disk, joystick or keys

Shamen has been captured by the evil Tex Hex, who is working with Stampede to resurrect the long dead dinosaurs that roamed New Texas. Only Shamen, the mystic indian, has sufficient power to bring back the dinosaurs. Marshal Bravestarr is the only hope for New Texas.

It's a horizontally scrolling shoot-em-up with two main stages to the game. In one stage you run around on foot blasting the minions of Tex Hex and in the other you fly around on a saddle...blasting Tex Hex's minions. At the top of the screen is a map of New Texas that only has two locations shown initially, others appear as you gain information. Next to the map is a view of the New Texas horizon with the sun shown above it. You have nine sunsets to complete the game or Stampede will rule.

Your first task is to find your saddle and then set off for the only other location that's shown on the map. As you reach each location you'll gradually gain the necessary information so that you can find Tex Hex. He's tricky to get, but if you capture him he'll bargain for his freedom. You then have one confrontation to go – with Stampede himself. Kill Stampede and New Texas is saved.

The horizontal scrolling of the landscape is smooth and the sprites are bright and colourful. Sound effects are loud and explosive, but there's only music when the game first loads.



●Bravestarr shoots it out with Tex Hex

My major criticism of this is that it's too easy to complete. There are only two opponents that are even remotely difficult to defeat and they are Tex Hex and Stampede. Once you've defeated both of them the game ends and you're left with the feeling that you've got little for your money. Younger gamesplayers may find the game a bit more challenging, but hardened shoot-em-up freaks will want something more. **GBH**

SECOND OPINION

The graphics flatter to deceive I'm afraid. It's jolly to play for half-an-hour until you've cracked it, but after that there's no reason to come back to it. Somebody should have beefed up the puzzling side of the game to give it much wider appeal than just to people who watch the cartoon.
BW

GREEN SCREEN VIEW

Everything's just as easy to see in green as it is in colour.

The Verdict

GRAPHICS 67%
- □ Smooth horizontal scrolling.
- □ Colourful, well animated sprites.

SONICS 46%
- ■ Simple sound effects.

GRAB FACTOR 57%
- □ Blam, blam, blam and more blam.
- ■ Keep on blamming.

STAYING POWER 34%
- ■ Not enough variation in gameplay.
- ■ Far too easy to complete the game.

AA RATING 39%
- ■ A game that only younger gamesplayers will find challenging.

FIRST DAY TARGET SCORE
Complete the game.

CRAZY CARS

Titus, £9.95 cass, £14.95 disk, joystick or keys

Sit yourself down in the driving seat of a fast sports car and prepare to race in the American Cross Country Prestige Cars Race. There's only one course to race around, but it does get more difficult on successive levels.

The screen is split into two areas: a 3D scrolling play area at the bottom of the screen and an information panel in the upper part. The score, level, stage, speed and time remaining are all displayed in the status panel. Your score increases as you progress through the different levels and stages of the race. The speedometer is a digital readout and so is the time remaining indicator. You initially have 65 seconds to complete the race, bonus seconds are awarded at the end of each stage. Time is lost when you collide with other cars and you're slowed down when you hit the edge of the track. Fail to reach the end of the track within the time limit and it's game over.

Each level is made up of ten stages and after all ten have been completed your car is upgraded to the next in the list. You begin the race in a Mercedes and can progress to a Porsche, Ferrari and finally a Lamborghini.

The scrolling 3D graphics are very fast, but the corners do seem to materialize out of nowhere. The cars are large and colourful, but there isn't much colour in the background. The only sound is that of the engine hum.

The Verdict

GRAPHICS 59%
- □ Fast 3D scrolling.
- ■ The background could have been more colourful.

SONICS 27%
- ■ Brrm, brrm.

GRAB FACTOR 67%
- □ Rushing around the course is fun to begin with.
- ■ Sudden corners spoil it.

STAYING POWER 54%
- ■ Not much variation from race to race.
- ■ Too easy to complete and when you've overtaken all the other cars there's little challenge.

AA RATING 59%
- □ It's better than *Outrun*.
- ■ ...but then what isn't?

It's fun to play for a while, but there really isn't enough to it to have much long term appeal. The main problem is the unrealistic appearance of the corners which is annoying. As a budget game this would be worthwhile, but at full price I'm not so sure. **GBH**



●Bumps send you hurtling into the air

FIRST DAY TARGET SCORE
Complete level one.

SECOND OPINION

The corners that pop out of nowhere and the unrealistic behaviour of the other cars, spoil an otherwise OK game. The best part about it is the undulating road and jumps that throw the car all over the place. Simple stuff that isn't going to keep you entertained for long.
BW

GREEN SCREEN VIEW

You'll still be able to see everything in green.

OINK

CRL, £9.95 cass, £14.95 disk, joystick or keys

Producing a magazine is the primary objective of this game. You are the editor with a deadline looming just days away. If you don't manage to get it out on time then you'll be off to join the millions of unemployed.

SECOND OPINION

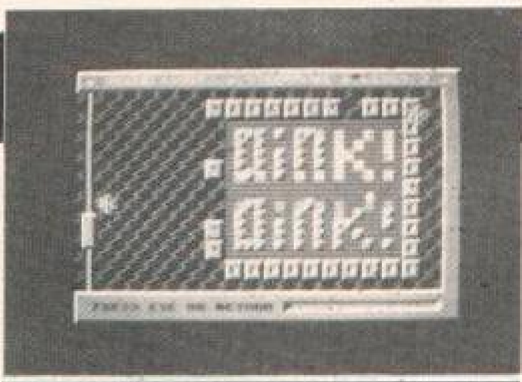
I enjoyed this one quite a bit. The first and third sub-games are very playable variations on well established themes. The second one is keyboard smashingly frustrating. There's no one thing that stands out as great about it but it's a competent package, much improved by not reading the pages when you've finished them. BW

GREEN SCREEN VIEW

Everything can be clearly seen in green.

There are nine pages to the magazine and each of them must be filled – no creative use of white space allowed. Pages one to three have sub-games. Playing each of the games gains you panels that are positioned on the pages. Bonus panels are awarded too and they can be put onto any of the pages from four to nine. As the panels on a page get filled in you can read them.

The first of the three games in a breakout clone. The bat is at the left hand side of the screen and lots of blocks are positioned to your right. Using the ball you have to clear the screen of blocks. Your bat is armed with a laser that you use to kill the aliens that come towards you. Bonus objects also come on with the aliens sometimes and they give you a special power, bonus panels, bonus points or an extra life. When a screen is cleared you move onto the next, there are ten in all.



●Game one, the breakout clone

Game two is a horizontally scrolling game where you have to reach the end of a zone. You have a limited amount of power which is drained according to how high above the ground you're flying. Shooting question marks gains you power to reach the end of the zone, of which there are ten. Colliding with anything loses you a life.

Finally there's a flick screen maze type game where you have to collect letters and avoid or kill the aliens in the maze. Bonus panels are awarded for letters collected.

The graphics are smooth and colourful, but they are a trifle slow, especially in the third sub-game. Sound is limited to spot effects, none of which are outstanding.
GBH

FIRST DAY TARGET SCORE
Fill three pages.

The Verdict

GRAPHICS ... 68%
- □ Plenty of colour that's used well.
- □ Good scrolling on sub-game two.

SONICS ... 31%
- ■ Simple effects and no tunes.

GRAB FACTOR ... 65%
- □ The sub-games are simple but enjoyable.
- ■ The jokes are dreadful.

STAYING POWER ... 57%
- □ Meeting that deadline will be a tricky task.
- ■ Game two is very frustrating.

AA RATING ... 59%
- ■ Lacks a certain sparkle.

DARK SCEPTRE

Firebird, £8.95 cass, £14.95 disk. joystick or keys

The Dark Sceptre is an evil artifact that must be destroyed. You command a company of men that have the task of destroying it. You are not the only one seeking for the Sceptre though, six other commanders are also on the hunt for it and they will stop at nothing to find it first.

SECOND OPINION

It's a tremendous idea for a game but a complete disaster in implementation. I like the idea of controlling many characters with detailed instructions, making allowances for personality and trying to complete a complicated quest. What I don't like is watching a bunch of slowly animated characters jerking around aimlessly, getting gradually wiped out. Results aren't tangible enough to reward good decision making and the whole thing is too much of a spectator sport. BW

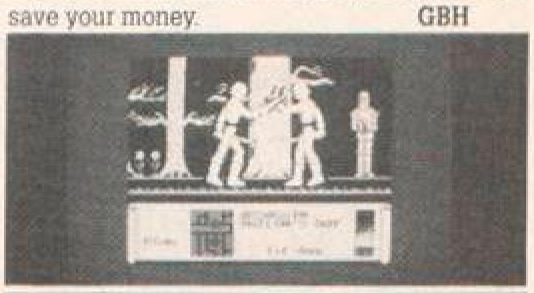
GREEN SCREEN VIEW

You can still see what's going on in green.

There are two main areas to the screen display: a large graphical representation of the current location and it's occupants, and below it a panel through which you enter commands and receive information. Five different commands can be entered: watch, scan, check, plan and quit. Scan shows you an overhead view of the island and highlighted squares indicate the position of your men. Check gives you information on the personality and orders of the currently selected character. The plan option is used to issue orders to your men and quit allows a partially completed game to be saved. The watch option is used when you hear the sound of battle, you then get to see the battle between your warrior and the foe. You have eight types of men in your force, each with their own strengths and weaknesses.

If you want to see big, animated graphics then this has definitely got them. Unfortunately they move so incredibly slowly that the speed of the game is reduced to a snails pace. Sound is just footsteps and sword fight effects.

There are lots of things that you can tell your warriors to do, but watching them walk around doing them is slow and boring. The idea of the game is fine, it's just executed very badly. If you want to spend lots of time watching things happen as if they were an action replay then try this, otherwise you may as well save your money. GBH



●Huge characters, but they walk very slowly

The Verdict

GRAPHICS ... 58%
- □ Large and detailed characters.
- ■ Slow, jerky animation.

SONICS ... 23%
- ■ Footsteps and sword against sword are all you get.

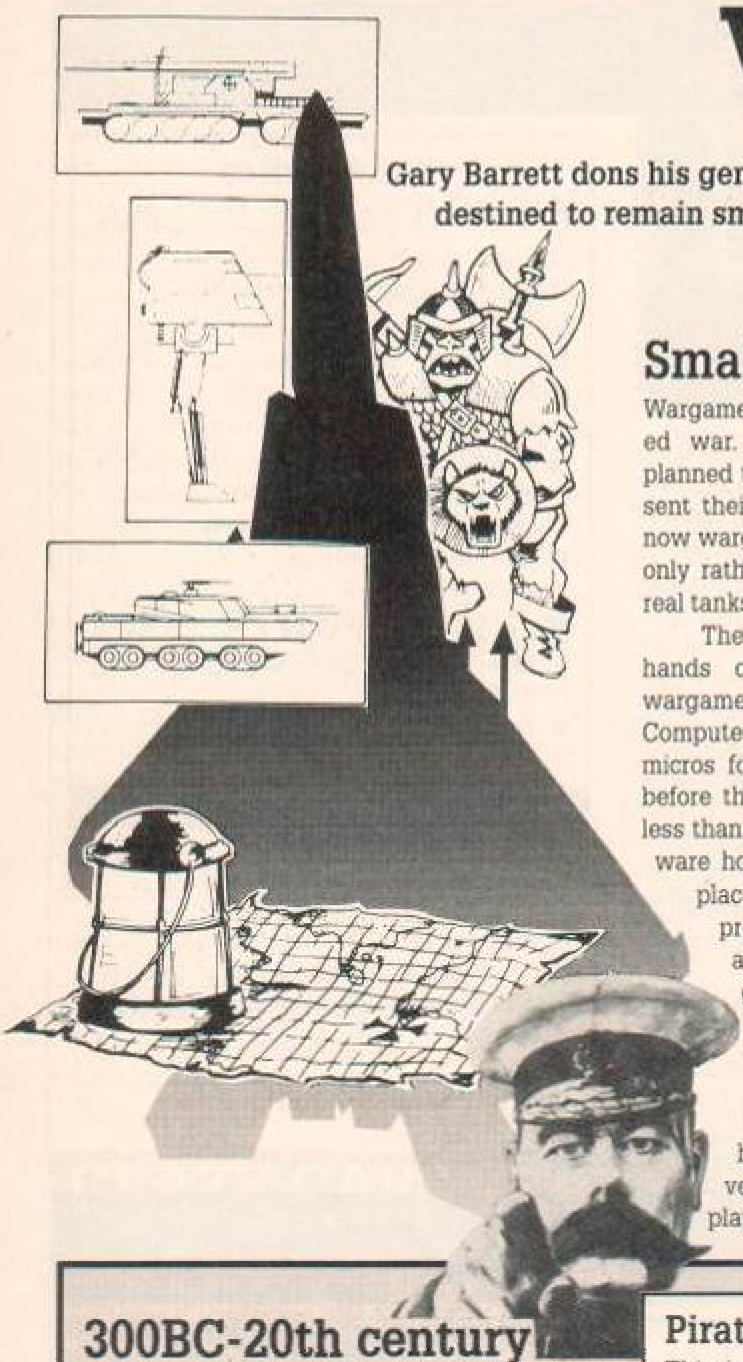
GRAB FACTOR ... 36%
- □ Lots characters to investigate and commands to implement.
- ■ Slow action will put all but the most persistent off.

STAYING POWER ... 57%
- □ The quest is a complicated one to complete.
- ■ Unfortunately most of the time is spent waiting for something to happen.

AA RATING ... 47%
- ■ Another that promised a lot, but failed to deliver.

Veni, Vidi, Vici

Gary Barrett dons his general's cap and surveys the field of strategy and war games. Are they destined to remain small conflicts in the games war, or can they establish a new front?



Small scale warfare

Wargames have been around since man invented war. Generals throughout history have planned their strategies using figures to represent their's and their opponents forces. Even now wargames are played by the armed forces, only rather than using figures they often use real tanks and soldiers.

The defence of many nations is in the hands of computers and they too play wargames – remember the film Wargames? Computer wargames have been lurking inside micros for many years. They date back way before the CPC, to the days when there was less than 16K of memory to play with and software houses were springing up all over the place. The standard of presentation and programming has improved considerably since the early days and today's games are much more sophisticated.

Arcade vs wargame

There are several differences between strategy/wargames and conventional style arcade games. Two player arcade games are rare, but wargames are more often than not one and two player games. Arcade games rely on your ability to think fast and react quickly. Wargames are complete opposites, you have to think and plan every move carefully and frequently you need to think several moves ahead. Fast reactions are usually not needed either because commands are entered at your own pace.

Wargames often have multiple skill levels whereas a typical arcade game just gets progressively more difficult. Arcade games generally have a high initial impact that tends to tail off rapidly. Strategy/wargames don't have the same impact, but they take much longer to complete. How many arcade games do you know of that take 16 hours to complete? Fortunately most wargames have a "save game" option that means you can carry on at a later date.

How to play a wargame

Wargames are generally fought between two opposing armies on a map that represents the battlefield. The armies are split into units of varying sizes and different weaponry. Artillery and aircraft often come into the games too, and so does magic in some cases. Your objective is

300BC-20th century

Austerlitz

The Napoleonic wars are another popular setting for war games. You play Napoleon and have the task of defeating the Austro-Russian army. It's a single player game with three different skill levels.

Sorcerer Lord

A fantasy wargame that pits you against the evil Shadowlord. A detailed booklet gives you plenty of information and atmosphere. Sorcery can change the outcome of a battle to some extent, but it's effect is only minor.



Pirates

This is more of a strategy game than a wargame. You're a swashbuckling buccaneer in the 17th century out to make your fortune. The gameplay is simple, but it does have something that makes you want to keep on playing. There are four skill levels, but the highest is only of intermediate difficulty. The major disadvantage is that only 6128 owners can use it because it uses 128K and is only available on disk.



Waterloo

This is probably the most famous Napoleonic battle of them all. There are no skill levels and no two player option to this wargame, but it's demanding enough to keep advanced players busy for a long time.

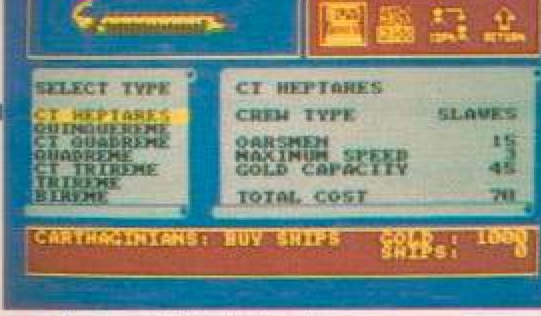
Legions of Death

A strategy game set between the years of 264BC and 146BC. Carthage and the Roman Empire are in a struggle for survival. You have a choice of being either force or you can play against a human opponent. Play revolves around navigating your ship from place to place and attacking enemy ships and cities.

Annals of Rome

A strategy/wargame of political intrigue that begins in 273BC. You must compete with up to 13 other power groups as you try to create a powerful empire. You have many forces at your disposal that must be deployed with care throughout the globe.





● Legions of Death, the ship buying stage

usually to capture somewhere, force your opponent to retreat or even completely destroy his armies. The games are played on a turn basis, play cycles from player to player until somebody wins or there's a draw. Each turn is split into several phases that involve movement, combat and others that depend on the setting.


● Battlefield Germany, war has just begun

Magic doesn't crop up very often in World War II battles and not many dragons fire laser rifles. Historical battles are often used, the Napoleonic wars and the Second World War are two of the most popular periods, but most other periods are covered from the distant past to the far future. Fans of fantasy and science fiction will find games to suit their tastes.

Many games have different skill levels so that even beginners can beat the computer. The easy levels in wargames are usually small scenarios with the odds stacked in your favour. More advanced players will go for the higher levels with larger scale battles and the advantage with the enemy. The option for two players can also add to a games appeal, because even the most demanding computer opponent can be vanquished eventually.

Strategy games are less concerned with the mechanics of battle and tend to concentrate more on being easy to use and less technical. Realism is to some extent ignored to make things easier for a beginning player, but still demanding for a more advanced player.

Battling the odds

Strategy/wargames still have a minority market and this is basically for two reasons: they tend to be expensive and they lack instantaneous appeal. High prices are a consequence of lower sales and the longer development times that are needed for strategy games. Many stores don't stock games unless they're guaranteed to be best sellers. Strategy/wargames just don't sell in the quantities that arcade games do, but they do have a much longer shelf life.


● Southern England is under attack in Battle of Britain



Wargames are, not surprisingly, often programmed by wargamers and they sometimes forget that there are people who have never played a wargame before. This often results in the instructions being a little on the skimpy side and confusion is all that the player gets from the game. Fortunately software houses have realised this and now many games come with some simple "how to play" instructions, or if the game is very complex then there will hopefully be a very detailed manual to accompany it.

The chosen few

Strategy/wargames may not be as common as arcade games, but there are still plenty to choose from. The three short reviews that follow are of the best of the bunch and they should keep you sitting in front of your CPC for many long hours. They each offer something slightly different: *Lords of Midnight* has outstanding graphics as well as a challenging computer opponent, *Conflicts 1* is a compilation of three games that each have optional arcade sequences just in case you want a break from the tactical thinking and *Vulcan* is a true wargame where tactics need to be planned carefully.


Lords of Midnight, a game of good against evil

Lords of Midnight

The good news is that this is an all-time classic strategy/wargame. The bad news is that at present nobody is selling it. You might still be able to find a copy lying around in a computer store somewhere, but otherwise it's a matter of putting pressure on Amsoft to re-release it – enough requests and they might do so.


● 3D landscaping in the land of Midnight

Lords of Midnight is set in the fantasy world of Midnight. It's a battle of good against evil, you against the evil witchking Doomdark. His dark hordes are pouring south over the land of Mid-

Second World War

Desert Rats

The North African campaign was fought during the years of 1941 and 1942. In the single player game you can be the Allies or Axis and there is also a two player option. There are six different scenarios to play and as usual the longest takes many hours to complete.

Arnhem

Operation Market Garden is the setting, the attempt by the allies to secure three Dutch bridges from the Germans. One, two or three people can play and in the solo play you can choose to be the Allies or the Germans.

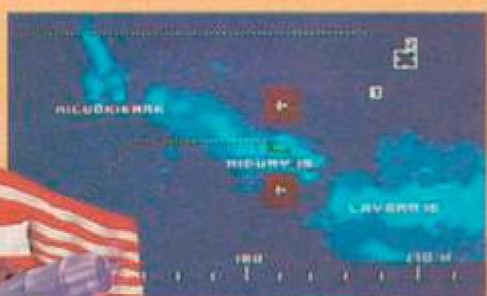
Guadalcanal

You have a choice of being either the American or Japanese forces in the battle for control of the pacific island of Guadalcanal. Land, air and sea forces are all involved in this icon driven wargame. Three scenarios are supplied to keep you busy.



Pegasus Bridge

One or two players can take part in the battle for control of the bridge over the Caen canal and you can choose to be either the British or German forces. There's only one difficulty level, but winning as the Germans is harder.



Battle for Midway

You play the Americans in the battle for Midway Island. America holds the island and your enemy the Japanese need it so that they can use it as a base for attacks against the US mainland. There are three difficulty levels to choose, the hardest of which is still only of intermediate level.

Present to far future

Battlefield Germany

The setting for this wargame is the not too distant future and a full scale offensive has been launched by the Warsaw Pact. It's a small scale war over either six or twelve turns, after which a victory is declared according to the victory points totals. One or two people can play.

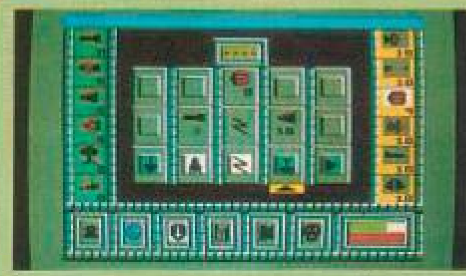
Rebelstar

Moonbase Delta is under attack from the Raiders, the Operatives were caught unawares. One or two players can take part in this skirmish type battle within the base. At a budget price this is an absolute must to all potential wargamers.

Armageddon Man

The future of the world lies in your hands as controller of the Olympus satellite network in this game of strategy set in the 21st century. Using diplomacy and the satellites you have to stop the earth bound nations from obliterating each other.





Firezone

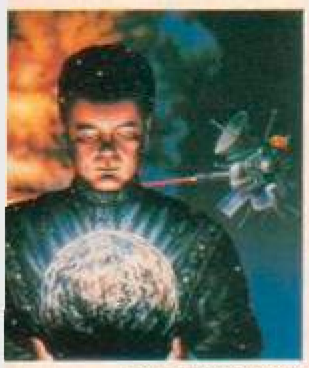
The 21st century is the setting for this small scale tactical wargame. You can play either the European League or the Pacific Combine. A two player option also exists. There are four scenarios supplied with the game (nine on the disk version) for you to play and there is also an editor that allows you to define your own scenarios.



High Frontier

Building a space based defence system to make your country safe from nuclear attack is the prime objective in this. Funds have to be distributed carefully to ensure that the best system possible is created. There are various options to extend play, but the instructions are unnecessarily complicated.





night as he prepares to overthrow you and your allies.

Midnight is a big place, there are 4,000 locations. Rather than the more common overhead view of the battle with small symbols to represent your forces, you get a 3D view of the surrounding landscape. You start with four characters under your control: Luxor, Morkin, Rorthron the Wise and Corleth the Fey, but they can be expanded to over 30 as you wander around Midnight recruiting allies. Luxor's allies fall into three categories: the Free, the Fey and the Wise. The Free and the Fey all have their own armies, the wise don't have armies and nor does Morkin. Doomdark has his own foul armies.

Winning can be achieved by one of two methods: destroying the Ice Crown or by capturing the Citadel of Ushgarak. The Ice Crown belongs to Doomdark and it is found in the Tower of Doom. Morkin is the only person capable of completing this quest and once he has the crown he needs to find someone capable of destroying it. Capturing Ushgarak is a much more demanding task and this is where the wargame element comes into it. The computer plays a good game and it will take you a lot of games before you win the battle. The quest is much easier to complete, but it's not a wargame.

Graphics in wargames are generally of poor quality, but in this they are a major part of the game. The 3D landscapes are very pretty, although they do slow down play a little as they are redrawn.

Both this and the sequel, *Doomdark's Revenge*, are excellent games, but the latter is a more difficult opponent to beat.

Vulcan

R.T. Smith is a familiar name to many wargamers, he has produced some of the best wargames to come out on the CPC. *Arnhem* and *Desert Rats* are two of his earlier games, both were excellent.



● Tunisia is the setting for Vulcan

World War Two is the setting, Tunisia in 1942-43. You can choose to be the allied or axis forces and there is also a two player option. There are five scenarios for you to play through: The Race for Tunis, Kasserine, Eighth Army, Operation Vulcan and The Tunisian Campaign. Playing time increases in each scenario, about half and hour for the first and up to 16 hours for the entire campaign.

The screen is the more traditional format for a wargame with an overhead view of the map and small symbols to represent the various units under your command. Commands are given to your forces via a simple keypress or with the cursor. There's also an option for hidden movement which means that you don't know where your enemy is until you've bumped into him or he finds you.

Each of the battles is played out over a set number of turns, more turns in longer battles. The turns are subdivided into a movement phase for each player which is followed by combat. After all of the turns have been played through the winner is determined according to how many victory points each player has.

The five different scenarios are basically different skill levels. The shortest battle is of intermediate difficulty, but the longer ones are for advanced players.

Conflicts 1

Three of PSS's older games have been put together as a compilation: *Battle of Britain*, *Tobruk* and *Theatre Europe*. All are single player games







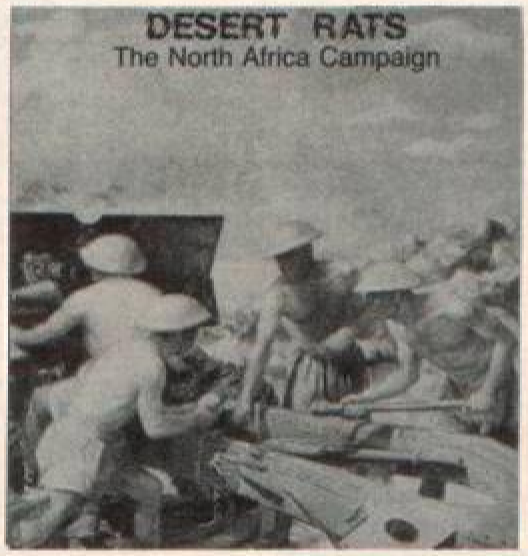
● Theatre Europe, a battle set in the not too distant future

only and they all feature some arcade action type sequences.

Battle of Britain is set in 1940 and you are in charge of RAF fighter command. The German Luftwaffe is trying to win air superiority over the RAF so that the invasion of Britain, codenamed Operation Sealion, can begin. You have to decide where your aircraft are to be sent so that they can intercept the incoming enemy planes. Ammunition and available landing strips must also be considered.

Tobruk is also set in World War II, in the North African desert. For a change you represent the Axis forces under the command of Field Marshal Rommel. You have 10 divisions of Afrika Korps and Italian tanks and troops at your disposal. Your task is to split the Gazala line and run for Tobruk. There is an unusual feature that makes this game stand out from the rest of the wargames, a two player option that uses two CPC's networked together via a special cable that you can obtain from PSS.

Finally there's *Theatre Europe*, a game set in the present where war has been declared between NATO and the Warsaw Pact. You can be either the forces of the East or the West. The battle is fought over a period of 30 days with conventional forces, if nuclear weapons are launched then everyone loses and the game ends. There are three skill levels that you can choose from which range from beginner to intermediate difficulty.



The three together are good value for money and are worth considering if you haven't got them all. The arcade sequences add little to the game, but they can be switched off.

Shape of things to come

Arcade games are usually 70% graphics and sound and 30% of actual code. Strategy/wargames on the other hand do have some graphical data, but a large chunk of memory is needed to provide the computer with artificial intelligence. A very intelligent computer opponent will provide you with a more challenging game. Programming the intelligence is time consuming and as a consequence of this strategy/wargames come out less often.

Defender of the Crown is a Cinemaware game being converted to the CPC by Mirrorsoft at the moment. It's a single player strategy game set in the chivalrous days of the middle ages. The King is dead and you take the part of one of the many lords who desire to rule England. The game originally game out on the 16 bit machines and was a huge hit with it's beautiful graphics. Not only were they pretty, but they require player interaction to affect the outcome of battles, sword fights and jousts.



● A shot from the Atari St version of Defender of the Crown

Because of the size of the game a cassette version is unlikely, and the disk version may even be a twin disk pack. Watch out for this one, it may even be worth getting a disk drive for.

If *Defender of the Crown* does well, and it probably will do if you consider sales on other machines, then Mirrorsoft are very likely to bring out some of the other Cinemaware games: *SDI*, *King of Chicago* and *Sinbad and the Throne of the Falcon* to name but a few. Watch the pages of Amscene for information as we receive it.



The other major wargames companies: PSS, CCS and Lothlorien have no immediate plans to release any more products on the CPC, but there are plenty of games in their back catalogues to keep you occupied.

Contacts

Activision ☎ 01 431 1101
23 Pond Street, Hampstead, London NW3 2PN
Amsoft ☎ 0277 230222
Brentwood House, 169 King's Road, Brentwood, Essex CM14 4EF
CCS ☎ 01 985 7232/3
14 Langton Way, London SE3 7TL
Grand Slam ☎01 439 0666
Victory House, Leicester Place, London WC2H 7NB
Firebird ☎ 01 240 8838
First Floor, 64-76 New Oxford Street, London WC1A 1PS
Lothlorien ☎ 061 773 1068

Martech ☎ 0323 768456
Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE
Microprose ☎ 0666 54326
2 Market Place, Tetbury, Gloucs GL8 8DA
Mirrorsoft ☎ 01 377 4645
Athene House, 66-73 Shoe Lane, London EC4P 4AB
PSS ☎ 0203 667556
452 Stoney Stanton Rd, Coventry CV6 5DG

Games without Frontiers

The what, who, how much and when of all the games mentioned in this article. They're divided into three categories of difficulty to give you a little more help in deciding which games to go for.

The Game	Software House	Price	Issue Reviewed
Beginners			
Armageddon Man	Martech	£12.95/£19.95	26
Firezone	PSS	£12.99/£17.99	31
Legions of Death	Grand Slam	£9.95/£14.95	21
Pirates	Microprose	£19.95 disk	32
High Frontier	Activision	£9.99/£14.99	30
Rebelstar	Firebird/BT	£1.99 cass	18
Intermediates			
Annals of Rome	PSS	£12.95/£17.95	17
Battlefield Germany	PSS	£12.95/£17.95	11
Conflicts 1	PSS	£12.95/£17.95	
Guadalcanal	Activision	£9.99/£14.99	30
Lords of Midnight	Amsoft	N/A	1
Pegasus Bridge	PSS	£12.95/£17.95	27
Sorcerer Lord	PSS	£12.95/£17.95	29
Advanced			
Arnhem	CCS	£9.95 cass	3
Austerlitz	Lothlorien	£9.95/£14.95	
Desert Rats	CCS	£9.95 cass	7
Doomdark's Revenge	Beyond/BT	N/A	13
Vulcan	CCS	£9.95 cass	21
Waterloo	Lothlorien	£9.95/£14.95	

SABOTAGE

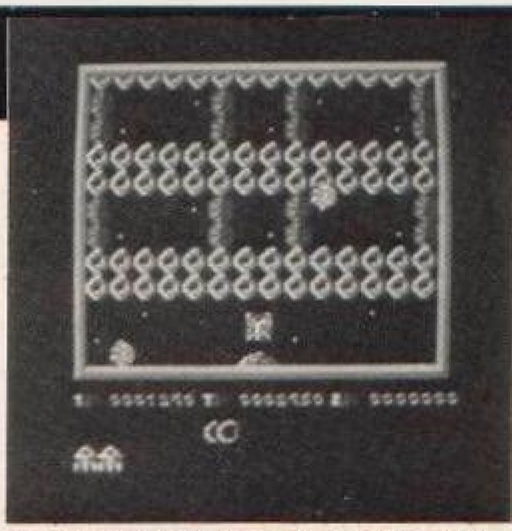
Zeppelin, £2.99 cass, joystick or keys

You have been hired as a mercenary by the people of your own planet to seek and destroy the endless waves of attacking aliens. If you find and destroy the alien mothership then your planet is safe, otherwise it's curtains.

It's a vertically scrolling shoot-em-up with lots of lovely little aliens to blast into millions of tiny pieces. You can move your ship in all four directions as you try to kill and not be killed. There are eight sectors to fight through, each sector being several screens in height. At the end of a sector you will find some rebels who will give you a piece of blueprint. You will also receive a password so that you skip early levels and get on with the tough fights. Passwords are only available for the first six levels, the last two must be completed the hard way. Once you have all eight blueprints a secret computer code is revealed and you can find the mothership.

The scrolling is smooth and the sprites only flicker a little. Sound effects can be described in a single word, yuk!

Scrolling shoot-em-ups are by far the most common type of game and there are some really good ones. This is not the best of the bunch, but if you want something for a quick blast then this isn't bad. **GBH**



●Blast the aliens

SECOND OPINION

What can you say about yet another scrolling shoot-em-up? It's a nice blast and little else. **BW**

GREEN SCREEN VIEW

No problems playing in green.

The Verdict

GRAPHICS 64%
- □ Fast and smooth vertical scrolling.
- □ Colourful sprites that are well animated.

SONICS 24%
- ■ Awful sound effects.

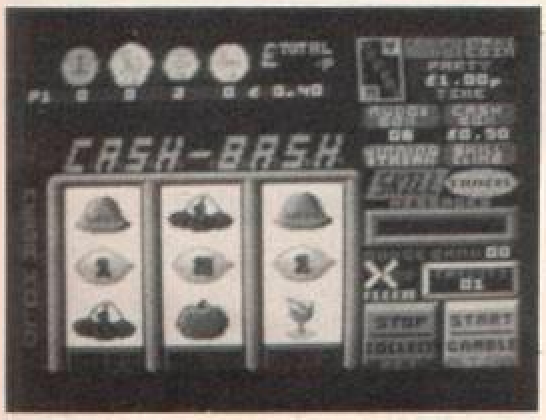
GRAB FACTOR 46%
- □ Nice use of icons to select the options.
- ■ Unless you really want another shoot-em-up don't bother.

STAYING POWER 38%
- □ Eight levels of increasing difficulty.
- ■ One level is much the same as the other.

AA RATING 45%
- ■ Nothing new has been added to the old "save the world" theme.

FRUIT MACHINE SIMULATOR

Codemasters, £2.99 cass, keys only



●A winning line

The one thing that a fruit machine or one-armed bandit has going for it is the chance that you might win or lose some money. You can win on a computer, but you don't get the same kick as you do when you win in real life.

Just in case there's some of you who haven't seen a fruit machine in your life, here's a brief idea of the game. You insert a coin, press the start button and wait for the reels to stop spinning. If a winning combination is in the central row of the reels then you win some money, if it isn't then you'll lose some. You keep on doing this until you decide that you've had enough or you run out of money. The bit about inserting a coin is not to be taken literally with your CPC, it's just a figure of speech.

On the screen there are the three reels that house the different flavours of fruit. There are various other things located around the screen: how much money you have, the number of nudges, whether anything's held and other fruit machine-ish features.

The scrolling of the reels is done smoothly and colour is used well on them. Other graphics are simple and ineffective. You do get to hear a tune and the usual bit of Oliver twins digitised speech, but the other sound effects are just beeps and pings.

As a fruit machine simulator it does it's job well, with the exception that you can't win or lose money. If you really want a fruit machine then this is it. But who REALLY wants a fruit machine simulator? **GBH**

SECOND OPINION

It's time to get on my soap box and preach a little. Firstly, what on earth does a software house think its doing producing this sort of nonsense in 1988? Secondly, who has been buying this sort of thing and thereby encouraging them to produce more of this rubbish.

Here we are dealing with highly sophisticated bits of technology, capable of doing amazing things, and what do we use them for? Watching three silly little reels go round, that's what. Either the software houses had better shape up and start educating the game-buying public in the sort of high quality entertainment software they ought to be demanding, or the game-buying public should start screaming loud and clear what they do want.

If all this has interested you or stirred a reaction, good or bad, then for once I'm going to ask you not to write to me, but to every software house you can think of. Give them some feedback and let them know exactly what you want from a game, because it's you and they that count. **BW**

GREEN SCREEN VIEW

Everything's just as easy to read in green.

FIRST DAY TARGET SCORE

Win five pounds.

The Verdict

GRAPHICS 54%
- □ The reels scroll smoothly.
- ■ Other graphics are disappointing.

SONICS 63%
- □ Pleasant title tune.
- ■ Sound effects are useless.

GRAB FACTOR 29%
- □ All the fun of the arcade game...
- ■ except for the fact that you can't win or lose money.

STAYING POWER 12%
- ■ You can't win any money so what incentive do you have to keep playing?
- ■ The quest for a new high score is not rivetting stuff.

AA RATING 15%
- ■ It simulates a fruit machine, but it doesn't have the essential quality of risk.

GOTHIK

Firebird, £8.95 cass, £14.95 disk. joystick or keys

The wizard Argoth is dead, killed by Ansalon the evil arch-mage. Ansalon was not satisfied with killing Argoth, he also chopped his body up into little pieces and distributed them throughout the seven levels of the catacombs so that he couldn't be resurrected. You have a choice of rebuilding Argoth in the guise of either Olga or Olaf the vikings.

Gameplay is very similar to *Gauntlet*, you have a four way scrolling maze with monsters to kill, potions to find and of course bits of Argoth. The main difference is the status display which can be called up at anytime. This shows you how much of Argoth you've found, your magical energy level, your life force, any relics that you've found, your position in the tower and which of the three weapons you've selected. Magical energy is used up through casting spells and your life force is drained when the inhabitants of the catacombs hit you, in melee or missile combat. The skeleton or Argoth is filled in as you find more and more bits of him. ....The three weapons that you can choose are arrows, lightning bolts or the devastating fireballs.

SECOND OPINION

You can definitely get too much of a good thing, and I for one have seen too many Gauntlet *clones. This one does have some nice touches in terms of the potions and adversaries, but the gameplay is still very familiar.* **BW**

GREEN SCREEN VIEW

No problems playing in green.

The Verdict

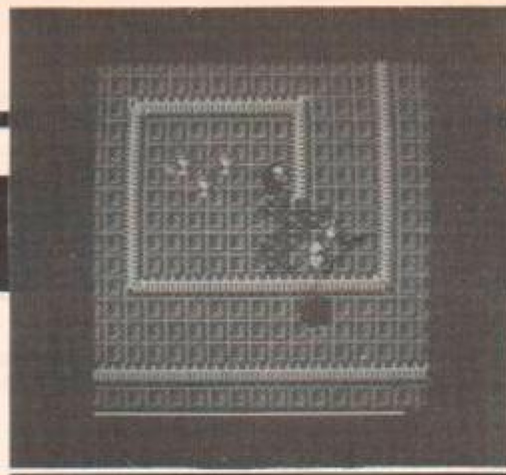
GRAPHICS 52%
- □ Colourful sprites.
- ■ Jerky scrolling.

SONICS 51%
- □ Do a viking dance to the title tune.

GRAB FACTOR 56%
- □ Lots of variety in the potion effects.
- ■ Things happen just a little too slowly.

STAYING POWER 63%
- □ Seven large levels each containing a bit of diced Argoth.
- ■ Basically just another *Gauntlet* clone.

AA RATING 59%
- ■ Good enough fun to play, but there are already many games in similar vein on the market.



●Olga stands next to a potion

There are 32 different potions that can be found throughout the catacombs, most are useful, but there are some nasty ones. *Jerico* is a great potion because it makes all the walls on a level fall down, trap on the other hand makes bracken appear all around you which pens you in. Fortunately it can be burnt away with the cantrip (small spell) Firestorm.

The scrolling is adequate and colour is okay, but the animation is poor. A boppy little tune plays on the title screen, but there are none within the game itself. The sound effects are not fantastic, but they do their job.

It's not the most original game to come out this year, but it is fun to play. It's a pity that the good potions can't be distinguished from the bad in any way, but perhaps it would make things too easy if they could. **GBH**

FIRST DAY TARGET SCORE

Become a Supreme Pune – what ever that is.

HUNT FOR RED OCTOBER

Grand Slam, £14.95 cass, £19.95 disk, joystick or keys

Red October is the latest Soviet nuclear submarine and you're the commander of it. Defection is your objective, the crew doesn't know about it, but the Soviet navy does. Can you reach the shores of America or will you be caught and sunk? The first thing you should do when the game loads is save it, because the first game is likely to last for only a couple of minutes.

SECOND OPINION

Never in the history of warfare has so much been paid by so many for so little. Looking through the manual you would think that this was an excellent simulation. It deserves such status because the game drowns you at the bottom of the Atlantic without fail. Completing Red October will prove extremely tedious. **PbM**

GREEN SCREEN VIEW

The maps are a little tricky to interpret, US ships and Soviet ships look very similar.

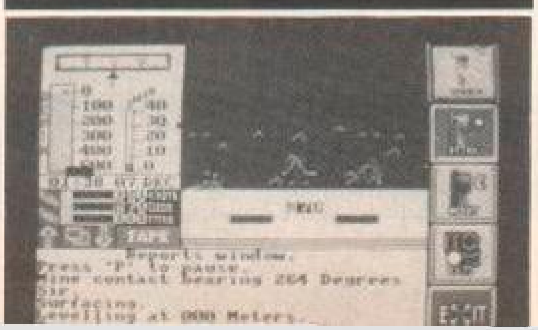
The screen is split into four main sections: a column of icons to the right, a message window at the bottom, an information/command panel to the left and a main display. The icons allow you to change the engine and propeller type, look through one of the many periscopes and launch torpedos. The message window shows what commands you have ordered and informs you of what's going on around you. The information/command panel shows your depth, heading and speed, it also allows you to change them. Finally there's the main display which shows a map of the atlantic, your periscope view and various other displays that crop up in play.

Fun is lurking deep within this game, unfortunately it's buried beneath a mass of frustration. Staying alive long enough to enjoy it is the major problem. Just when you think you've got the controls sorted out you get hit by a Soviet torpedo and have to start all over again. It's even worse if you didn't save the game as soon as it loaded because then you have to wait for the program to load again.

The graphics are simplistic, but there is enough detail and colour to make it look good. Sound is limited to the noises that you'd hear inside a submarine.

There are difficult games and there are games that are almost impossible to play, this is one of the latter. That's a pity because it looks good and with a little more care it could have been excellent. **GBH**

●A couple of minutes into the game and a Soviet torpedo is heading your way



The Verdict

GRAPHICS 67%
- □ Good use of icons.
- ■ Simplistic graphics, but they do their job.

SONICS 27%
- ■ Submarine noises, but that's all.

GRAB FACTOR 37%
- □ A hefty and interesting manual make things sound intriguing.
- ■ Much too difficult to stay alive initially.

STAYING POWER 58%
- □ Reaching the US is a task worthy of Clint Eastwood...
- ■ but the frustration factor may stop you from even trying.

AA RATING 44%
- ■ Expensive and incredibly difficult.

FIRST DAY TARGET SCORE

Survive for ten minutes.

CHARLIE CHAPLIN

US Gold, £9.99 cass, £14.99 disk, joystick or keys

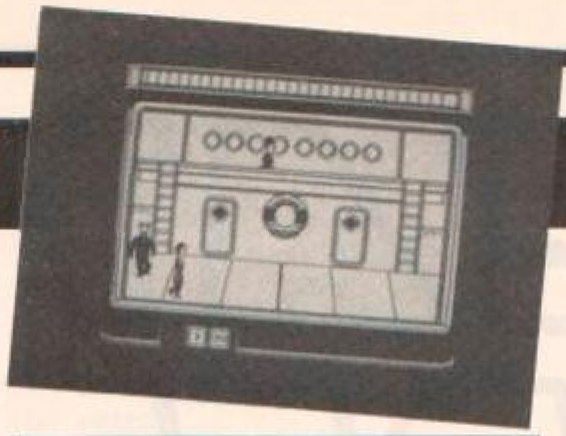
The famous silent movie star makes the move from the large screen to the small. The little man with the moustache, bowler hat and walking stick is being directed by you to make loads-a-money for the movie company.

The whole of the screen is a stage in which Charlie and all the other actors and actresses wander around acting. Before you start filming you have to select a script, there are plenty to choose from and they are all Chaplin film titles.

During filming you control Charlie who has to act out the scene, the rest of the cast are under computer control. The plot to most of the scenes is fairly simple, mainly due to the fact that Charlie can only walk around, climb, punch people or look stupid. The scenes usually last for about a minute and the movies themselves are made up of several scenes.

Once a scene has been shot you get a chance to edit it. On the editing screen you have a choice of freezing the film, playing it or fast forwarding it. It's a pity that you can't rewind it as well though. After all of the scenes have been shot you can then show the movie. A review will appear in Variety magazine and you'll get the critics opinion of your film. The better the review that your film gets the more money that you'll receive.

You won't be surprised to discover that the game is played in black and white, but that doesn't matter as they were trying to capture the atmosphere of a silent movie.



●The editing screen

If originality made sales then this would probably be a number one. The novelty value is high, but in the long term you'll lose interest because of there's so little to actually do. **GBH**

SECOND OPINION

After a movie screening you often get the comment "Where have the laughs gone?" What I want to know is where the gameplay went. All you do is punch people – hardly exciting stuff. You can't actually "edit" a film, just watch it in replay. You can't even seem to use props to any effect. It was a terrific idea for a game but it won't leave the audience laughing. **BW**

GREEN SCREEN VIEW

It's black and green instead of black and white, no problems.

FIRST DAY TARGET SCORE

Get a decent movie review.

The Verdict

GRAPHICS **48%**
- □ Detailed scenery and sprites...
- ■ but they are a little flickery.

SONICS **41%**
- □ Short tune introduces scenes.
- ■ Just one effect.

GRAB FACTOR **58%**
- □ Strategy and animated graphics combine to try to give initial impact.
- ■ It's a pity it doesn't work due to the lack of variety.

STAYING POWER **45%**
- □ A large selection of different movies.
- ■ Unfortunately every script involves just walking around and punching people.

AA RATING **50%**
- ■ Nice concept that doesn't live up to expectations.

PINK PANTHER

Magic Bytes/Gremlin, £9.99 cass, £14.99 disk, joystick or keys

Poor old Pink Panther hasn't got loads a money, he is in fact broke. To rectify this cash deficiency he's stooped so low as to get a job as a butler. The truth is that he's only pretending to be a butler, the real motive behind his job is so that he can rob his employers during the night.

The major part of the screen display shows the interior of the house and the bottom has a small panel that gives you information and allows you to do things. The Pink Panthers face in the panel gives an indication of how tired you are – you'll get caught if you fall asleep. Next to that is a thought bubble with which you select which object to inflate.

There are five houses in all for you to raid and it's just your luck that all of the occupants are sleepwalkers. You also have to keep and eye out for Inspector Clouseau who is trying to catch you pink handed. Littered throughout the houses are flashing objects, they are the ones worth stealing. Once you have enough money you can leave and go to the next house. Different objects are needed before you can enter other houses and they have to be bought with your ill gotten gains.

Sound effects are very simple and rare, but a very pink tune plays continuously. The graphics are pretty and colourful, if on the small side. The sprites are nicely animated.

Unfortunately there doesn't really seem to be that much to do other than wander around stealing things, avoiding Inspector Clouseau and trying to make sure that the sleepwalker doesn't wake up. **GBH**

SECOND OPINION

This one is just too difficult to get started with. Each game lasts a few seconds, and even when you know what you're doing it's a fairly tedious task. It's not a bad idea but instead of performing tasks using awkwardly selected icons (dreadfully translated instructions for them as well), they should have used a more easily selected system. Perhaps turning it into less of a "panic" task and more of an arcade adventure. **BW**

GREEN SCREEN VIEW

The green panther looks OK too.

The Verdict

GRAPHICS **78%**
- □ Excellent background graphics.
- ■ Graphics are a little small.

SONICS **43%**
- ■ Monotonous rendition of PP theme.

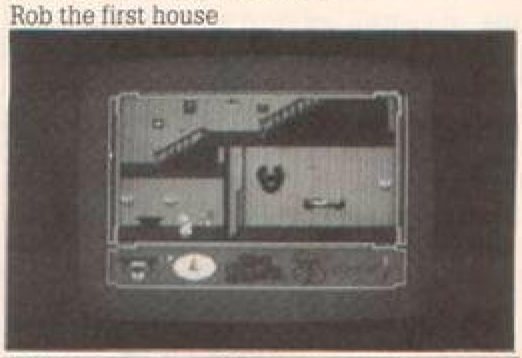
GRAB FACTOR **48%**
- □ Running around trying to keep the sleepwalker asleep is challenging.
- ■ Until you know what you're doing it'll be game over in a few seconds.

STAYING POWER **52%**
- □ Five houses to raid.
- ■ Once you've raided one house you've raided-em-all.

AA RATING **49%**
- □ Nice try at capturing the cartoon spirit.
- ■ but the game fails to deliver.

FIRST DAY TARGET SCORE

Rob the first house



●Pink Panther tries to divert the sleepwalker

CHEAT MODE

Gary Barrett checks out your tips, pokes and game-busting ploys. The best ones win an entire issue's *Raves* and the *Mastergame*. Send your latest gem to: Cheat Mode, *Amstrad Action*, 4 Queen Street, Bath BA1 1EJ

This months Cheat Mode is monopolised by one man – Phil Howard. Not only has he produced a superb Xor screen designer, but for good measure he has thrown in a whole host of pokes for games using the new US Gold/Go loader.

POKE METHODS FOR TAPE

Here is how to input the majority of Cheat Mode tape pokes. The instructions for each poke tell you which of the two different methods to use. If you have a 664 or 6128, first type |tape.

METHOD 1

Rewind the game tape to the beginning. Now type in the poke listing. Then type RUN and press the Enter key. (Don't use the key marked CTRL or Control; that would stop the poke from working.) Press the Play key on the cassette deck, then any key on the main keyboard - spacebar will do nicely. The tape should now start to play through in the normal way.

METHOD 2

For this method you have to skip the first bit of the game program. To do that, start by rewinding the game tape to the beginning. Now type in the listing. Then type CAT and press Enter. Start the tape by pressing Play and then any key. Then watch the screen.

Soon you'll get the message Found *something* Block 1. It doesn't matter what the *something* actually is; this will vary from one game to another. If the Cheat Mode instructions just tell you to skip the first block, you should stop the tape here.

If the instructions tell you to skip several things, stop the tape when the Found message comes up for the last thing you're trying to skip.

Once you've stopped the tape, press Escape, type RUN and press Enter. Now press Play on the tapedeck and any key on the keyboard to start the tape running

Xor

A few months back we printed a *Leaderboard* course designer courtesy of regular hacker **Phil Howard**. Well he's done it again with a *Xor* screen designer. It enables you to redesign and rename the first level of the game.

The instructions on how to use it are fairly simple. On the left hand side of the screen is a small scale map of the maze and to the right is a list of options. A cursor is moved around the maze using the four arrow keys and the copy key is used to place the currently selected option. The options are cycled through with the Z and X keys.



The load and save options allow you to store and recover a partially designed screen. The routine option creates a file that is saved to tape.

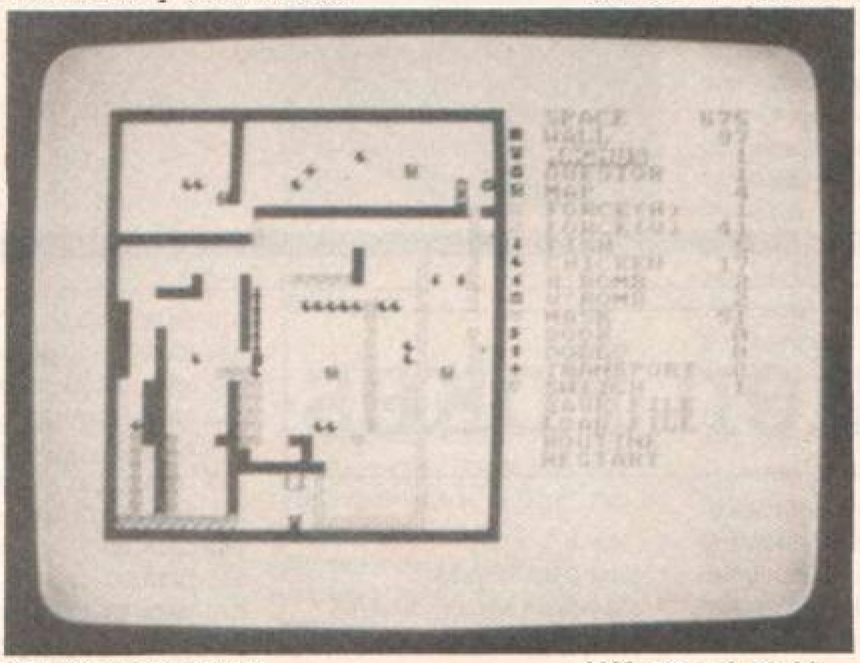
Before you use the routine option you should make sure of the following:

1) Questor and Magus are both in the maze.
2) that there's an exit door.
3) if there are any transporters then there must be at least two in the maze.

To play your new screen first put the routine tape in the deck and type RUN". Take the tape out, put the *Xor* tape in the deck and follow the on screen instructions.

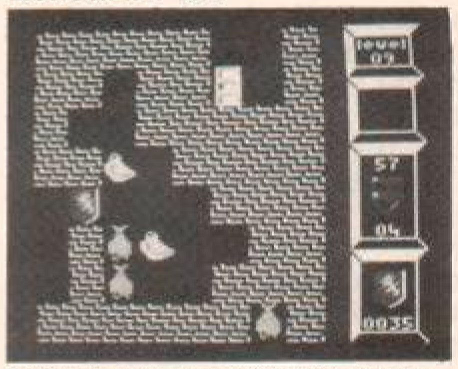
```
1 '** XOR LEVEL DESIGNER **
2 ' by Phil Howard
3 ' Amstrad Action June 88
10 SYMBOL AFTER 200
20 SYMBOL 201,252,252,252,252,252,252
30 SYMBOL 202,252,204,180,120,252,120
40 SYMBOL 203,252,120,180,204,252,120
50 SYMBOL 204,252,196,236,188,164,252
60 SYMBOL 205,64,252,64,8,252,8
70 SYMBOL 206,72,92,72,72,232,72
80 SYMBOL 207,120,48,48,120,120,48
90 SYMBOL 208,176,96,240,252,120,32
100 SYMBOL 209,28,48,120,120,120,48
110 SYMBOL 210,120,252,180,204,180,252
120 SYMBOL 211,204,252,180,204,120,48
130 SYMBOL 212,248,224,120,184,224,248
140 SYMBOL 213,120,48,252,48,120,48
150 SYMBOL 214,48,48,252,252,48,48
160 SYMBOL 215,204,252,204,180,120,48
170 SYMBOL 200,0:SYMBOL 216,0
180 SYMBOL 217,0:SYMBOL 218,0
190 SYMBOL 219,0
200 SYMBOL
220,255,129,129,129,129,129,129,255
210 DATA
0,0,1,1,4,0,0,0,0,0,0,99,1,0,2,0
220 DATA SPACE,WALL,MAGUS,QUESTOR,MAP
230 DATA FORCE(H),FORCE(V),FISH,CHICKEN
240 DATA H'BOMB,V'BOMB,MASK,DOOR,DOLL
250 DATA TRANSPORT,SWITCH,SAVE FILE
260 DATA LOAD FILE,ROUTINE,RESTART
270 DATA 00,03,02,02,02,01,01,02
280 DATA 02,03,03,01,02,02,03,01
290 DATA 3E,01,CD,59,BC,21,00,00
300 DATA 11,00,00,CD,C9,BB,21,8E
310 DATA 01,11,0C,00,FD,21,00,3C
320 DATA 06,20,D5,E5,C5,06,20,C5
330 DATA CD,4E,30,1B,1B,1B,1B,FD
340 DATA 23,C1,10,F3,C1,E1,D1,ED
350 DATA 52,10,E7,C9,21,00,00,11
360 DATA 00,00,FD,21,00,00,CD,C0
370 DATA BB,FD,7E,00,21,00,30,F5
380 DATA 85,6F,7E,CD,DE,BB,F1,C6
390 DATA C8,CD,FC,BB,C9,3E,02,
CD
400D ATA DE,BB,C9,21,00,39,11,
01
410 DATA39,01,00,07,36,00,
ED,B0
420 DATA C9,21,85,30,11,30,
3B,01
430 DATA80,00,ED,B0,C9,
22,2A,2A
440 DATA2A,2A,20,58,4F,
52,20,2A
450 DATA
2A,2A,2A,22,06,0F,21,30
460 DATA 3B,11,00,80,CD,77,BC,21
470 DATA 00,40,CD,83,BC,CD,7A,BC
480 DATA 21,7F,41,36,8F,21,CC,41
490 DATA 36,B3,21,2B,42,36,1A,23
500 DATA 36,7E,C3,05,40,21,00,39
510 DATA 11,00,04,01,00,03,ED,B0
520 DATA 21,3A,AD,36,C3,23,36,81
530 DATA 23,36,06,C3,00,AC,C4,14
540 DATA AC,21,00,04,11,00,84,01
550 DATA C2,01,ED,B0,21,00,06,11
560 DATA 14,25,01,2D,00,ED,B0,21
570 DATA D0,05,11,E9,1D,01,0E,00
580 DATA ED,B0,FB,C9
590 '** SET UP **
600 MEMORY &2FFF
610 RESTORE 270:y=0
620 FOR x=&3000 TO &30FB
630 READ a$:a=VAL("&"+a$)
640 POKE x,a:y=y+a:NEXT
650 IF y<>&536E THEN PRINT"ERROR!":END
660 SPEED WRITE 1:MODE 1
670 INK 0,26: INK 1,14:INK 2,0:INK 3,6
680 PEN 1:PAPER 0:BORDER 26
690 DIM a$(19),a(15),b(15),m(5)
700 a(0)=900
```

```
710 RESTORE 210
720 FOR x=0 TO 15:READ b(x):NEXT
730 RESTORE 220
740 FOR x=0 TO 19:READ a$(x):NEXT
750 GOSUB 1030
760 FOR x=0 TO 19
770 IF x<16 THEN PEN PEEK(&3000+x)
780 LOCATE 26,(x+1):PRINT CHR$(x+200);
790 PEN 1
800 LOCATE 28,(x+1):PRINT a$(x)
810 IF x>15 THEN GOTO 830
820 GOSUB 2970
830 NEXT...
840 WINDOW #2,1,25,1,25
850 WINDOW #3,26,40,21,24
860 PAPER #3,0:PEN #3,2
870 CALL &3010:n=0:nn=1:GOSUB 1530
880 newx=1:newy=1
890 '** KEYBOARD LOOP **
900 curx=newx:cury=newy
910 GOSUB 1600:GOSUB 1640
920 FOR x=1 TO 20:NEXT
930 IF INKEY(71)=0 THEN GOSUB 1460
940 IF INKEY(63)=0 THEN GOSUB 1500
950 IF INKEY(0)=0 THEN GOSUB 1110
960 IF INKEY(8)=0 THEN GOSUB 1150
970 IF INKEY(2)=0 THEN GOSUB 1190
980 IF INKEY(1)=0 THEN GOSUB 1230
990 IF INKEY(9)=0 THEN GOSUB 1270
1000 IF curx=newx AND cury=newy THEN 930
1010 GOSUB 1640
1020 GOTO 900
1030 '** CLEAR + BORDERS **
1040 CALL &306B
1050 FOR x=&3C00 TO &3C20
1060 POKE x,1:POKE x+&3E0,1
1070 NEXT
1080 FOR x=&3B1F TO &3FE0 STEP 32
1090 POKE x,1:POKE x+1,1
1100 NEXT:RETURN
1110 '** UP **
1120 IF newy=1 THEN RETURN
1130 newy=newy-1
1140 RETURN
1150 '** LEFT **
1160 IF newx=1 THEN RETURN
1170 newx=newx-1
1180 RETURN
1190 '** DOWN **
1200 IF newy=30 THEN RETURN
1210 newy=newy+1
1220 RETURN
1230 '** RIGHT **
1240 IF newx=30 THEN RETURN
1250 newx=newx+1
1260 RETURN
1270 '** COPY **
1280 IF n>15 THEN 1690
1290 p=cply-2
1300 GOSUB 1670
1310 POKE &3046,t:POKE &3045,t1
1320 p=cplx+2
1330 GOSUB 1670
1340 POKE &3049,t:POKE &3048,t1
1350 p=mem
1360 GOSUB 1670
1370 POKE &304D,t:POKE &304C,t1
1380 IF b(n)<>0 THEN 2310
1390 GOSUB 2680
1400 CALL &3044
1410 POKE mem,n
1420 CALL &3044:CALL &BB9C
1430 x=e:GOSUB 2970
1440 x=n:GOSUB 2970
1450 CALL &BB9C:RETURN
1460 '** LOOP THROUGH OPTIONS **
1470 n=n-1:IF n<0 THEN n=19
1480 GOSUB 1530
1490 RETURN
1500 n=n+1:IF n>19 THEN n=0
1510 GOSUB 1530
1520 RETURN
1530 IF n=nn THEN RETURN
1540 PEN 1:PAPER 0
1550 LOCATE 28,nn+1:PRINT A$(nn)
1560 PEN 0:PAPER 1
1570 LOCATE 28,n+1:PRINT A$(n)
1580 nn=n
1590 RETURN
1600 mem=cury*32+curx+&3C00
```



```
1610 cplx=curx*12+10
1620 cply=400-(12*cury)
1630 RETURN
1640 MOVE cplx,cply:CALL &3065:TAG
1650 PRINT CHR$(220);:TAGOFF
1660 RETURN
1670 t=INT(p/256):t1=p-(t*256)
1680 RETURN
1690 IF n>16 THEN 1860
1700 '** STORE + SAVE FILE **
1710 GOSUB 2990
1720 FOR x=0 TO 15
1730 p=a(x):GOSUB 1670
1740 POKE &3B30+(2*x),t1
1750 POKE &3B31+(2*x),t
1760 NEXT
1770 FOR x=0 TO 5
1780 p=m(x):GOSUB 1670
1790 POKE &3B50+(2*x),t1
1800 POKE &3B51+(2*x),t
1810 NEXT
1820 SAVE"XOR-FILE",b,&3B00,&500
1830 CLS
1840 GOSUB 2990
1850 RETURN
1860 IF n>17 THEN 2010
1870 '** LOAD FILE + RESTORE **
1880 GOSUB 2990
1890 LOAD"XOR-FILE"
1900 CLS
1910 GOSUB 2990
1920 CALL &BB9C:FOR x=0 TO 15
1930
a(x)=PEEK(&3B30+(2*x))+256*PEEK(&3B31+(2
*x))
1940 GOSUB 2970:NEXT:CALL &BB9C
1950 FOR x=0 TO 5
1960
m(x)=PEEK(&3B50+(2*x))+256*PEEK(&3B51+(2
*x))
1970 NEXT
1980 CLS#2:CALL &3010
1990 GOSUB 1640
2000 RETURN
2010 IF N>18 THEN 2240
2020 '** CREATE ROUTINE **
2030 GOSUB 2990
2040 IF INKEY$<>"" THEN 2040
2050 INPUT"NAME OF LEVEL  ",A$
2060 a$=a$+STRING$(14,CHR$(32))
2070 b$=CHR$(ASC(MID$(a$,14,1))+&80)
2080 a$=LEFT$(a$,13)+b$
2090 FOR x=1 TO 14
2100 POKE &3ACF+x,ASC(MID$(a$,x,1))
2110 NEXT
2120 c=&3900
2130 FOR y=1 TO 30:FOR x=1 TO 29 STEP 2
2140 t=y*32+x+&3C00
2150 p=PEEK(t)+PEEK(t+1)*16
2160 POKE c,p:c=c+1
2170 NEXT:NEXT
2180 POKE &3B10,VAL("&"+STR$(a(11)))
2190 CALL &3079
2200 SAVE "XOR-
ROUTINE",B,&3900,&300,&3B3F
2210 CLS:PRINT"PRESS BREAK -  THEN CALL
&3B3FTO LOAD AND RUNXOR"
2220 CALL &BB18:CLS:GOSUB 2990
2230 RETURN
2240 '** CLEAR + RESTART **
2250 GOSUB 2990
2260 PRINT:PRINT"ARE YOU SURE ?"
2270 IF INKEY(43)=0 THEN RUN 660
2280 IF INKEY(46)=0 THEN 2300
2290 GOTO 2270
2300 CLS:GOSUB 2990:RETURN
2310 IF a(n)=0 THEN 2330
2320 IF a(n)=b(n) THEN RETURN
2330 IF n=11 OR n=12 THEN 1390
2340 IF n=4 THEN 2400
2350 IF n=14 THEN 2480
2360 '** SHIELDS **
2370 d=n-2:d=d*8
2380 GOSUB 2740
2390 GOTO 1390
2400 '** MAPS **
```

```
2410 FOR x=0 TO 3
2420 IF m(x)>0 THEN 2460
2430 m(x)=mem:p=mem:GOSUB 1670
2440 POKE &3B25+2*x,tl:POKE &3B26+2*x,t
2450 X=3
2460 NEXT
2470 GOTO 1390
2480 '** TRANSPORTERS **
2490 FOR X=4 TO 5
2500 IF m(x)>0 THEN 2600
2510 m(x)=mem
2520 IF x=4 THEN d=19
2530 IF x=5 THEN d=29
2540 GOSUB 2740
2550 IF x=4 THEN POKE &3B1B,PEEK(&3B15)
2560 IF x=4 THEN POKE &3B1C,PEEK(&3B16)
2570 IF x=5 THEN POKE &3B11,PEEK(&3B1F)
2580 IF x=5 THEN POKE &3B12,PEEK(&3B20)
2590 x=5
2600 NEXT:GOTO 1390
2610 '** TOP LEFT OF SCREEN **
2620 tlx=newx-4:tly=newy-4
2630 IF newx-4<0 THEN tlx=0
2640 IF newx+5>32 THEN tlx=24
2650 IF newy-4<0 THEN tly=0
2660 IF newy+5>32 THEN tly=24
2670 RETURN
2680 e=PEEK(mem)
2690 a(e)=a(e)-1
2700 a(n)=a(n)+1
2710 IF e=4 THEN GOSUB 2890
2720 IF e=14 THEN GOSUB 2930
2730 RETURN
2740 '** STORE X,Y DATA **
2750 p=mem
2760 POKE &3B00+d,newx
2770 POKE &3B01+d,newy
2780 GOSUB 1670
2790 POKE &3B02+d,tl
2800 POKE &3B03+d,t
2810 GOSUB 2610
2820 POKE &3B04+d,newx-tlx
2830 POKE &3B05+d,newy-tly
2840 p=tly*32+tlx+&3C00
2850 GOSUB 1670
2860 POKE &3B06+d,tl
2870 POKE &3B07+d,t
2880 RETURN
2890 FOR x=0 TO 3
2900 IF m(x)=mem THEN m(x)=0:x=3
2910 NEXT
2920 RETURN
2930 FOR x=4 TO 5
```



```
2940 IF m(x)=mem THEN m(x)=0:x=5
2950 NEXT
2960 RETURN
2970 LOCATE 37,(X+1):PRINT
USING"###";a(x)
2980 RETURN
2990 WINDOW SWAP 0,3:RETURN
3000 END
```

Golden Pokes

Phil Howard has produced a bumper bundle of pokes for some of the recent Go and US Gold games. The protection systems are elaborate and tricky to get around, but Phil's managed it. There are three parts to the program, the Lock routine is the longest, but it is common to all of the games. The other two parts, the Key and the Cheat are specific to the individual games.

First of all type in the Lock routine and save it as `SAVE"LOCK"`. Next type in the program for the game that you want to cheat on and save that using: `SAVE filename$,A`, using an appropriate filename.

Whenever you want to cheat at the game do the following:

`LOAD"LOCK"`
`MERGE filename$` (filename$ is the name that used to save the cheat)
`RUN`

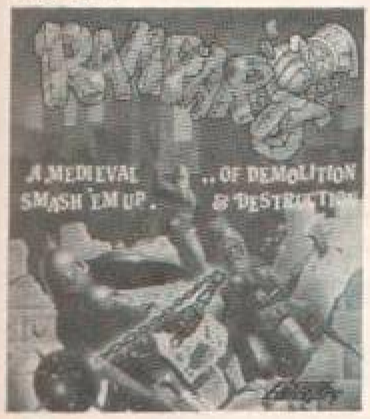
Don't worry about the long delay when the program is run because a lot of calculations are needed before the poke runs. The tape pokes take about 3.5 minutes and the disk poke takes about 15 seconds.

All of the tape pokes are Method 1 and the disk pokes need the game disk in the drive before you type `RUN`.

```
1 ' Lock
2 ' by Phil Howard
3 ' Amstrad Action June 88
10 '**** LOCK ****
20 '
30 Y=0:RESTORE 100
40 FOR x=&4200 TO &4386
50 READ a$:a=VAL("&"+a$)
60 y=y+a:POKE x,a:NEXT
70 IF y=37465 THEN 590
80 PRINT"ERROR IN LOCK":END
90 '
100 DATA FE,00,20,03
105 DATA C3,3B,43,FE
110 DATA 01,20,07,DD
115 DATA 36,0F,F6,0E
120 DATA 10,C9,FE,02
125 DATA 20,07,DD,36
130 DATA 0C,F9,0E,0D
135 DATA C9,FE,03,20
140 DATA 0F,DD,36,1E
145 DATA E9,DD,7E,0C
150 DATA D6,10,DD,77
155 DATA 0C,0E,1F,C9
160 DATA FE,04,20,07
165 DATA DD,36,11,F6
170 DATA 0E,12,C9,FE
175 DATA 05,20,07,DD
180 DATA 36,10,F6,0E
185 DATA 11,C9,FE,06
190 DATA 20,07,DD,36
195 DATA 0D,F8,0E,0E
200 DATA C9,FE,07,20
205 DATA 07,DD,36,1B
210 DATA EE,0E,1C,C9
215 DATA FE,08,20,07
220 DATA DD,36,0E,F7
225 DATA 0E,0F,C9,FE
230 DATA 09,20,07,DD
235 DATA 36,23,C0,0E
240 DATA 24,C9,FE,0A
245 DATA 20,13,DD,E5
250 DATA E1,11,06,00
255 DATA 19,7C,D6,10
260 DATA DD,75,15,DD
265 DATA 77,16,0E,17
270 DATA C9,FE,0B,20
275 DATA 13,DD,E5,E1
280 DATA 11,06,00,19
285 DATA 7C,D6,10,DD
290 DATA 75,14,DD,77
295 DATA 15,0E,16,C9
300 DATA FE,0C,20,13
305 DATA DD,E5,E1,11
310 DATA 07,00,19,7C
315 DATA D6,10,DD,75
320 DATA 10,DD,77,11
325 DATA 0E,12,C9,FE
330 DATA 0D,20,0F,DD
335 DATA 7E,03,D6,10
340 DATA DD,77,03,DD
345 DATA 36,1A,E9,0E
350 DATA 1B,C9,DD,36
355 DATA 1D,20,DD,36
360 DATA 1E,EB,0E,1F
365 DATA C9,F3,21,39
370 DATA 7D,11,39,5D
375 DATA 00,01,00,0D
380 DATA ED,B0,21,36
385 DATA 6D,11,37,6D
390 DATA 01,00,10,36
395 DATA 00,ED,B0,36
400 DATA C3,23,36,34
405 DATA 23,36,43,21
410 DATA D5,42,11,39
415 DATA 6D,01,0D,00
420 DATA ED,B0,21,40
425 DATA 6D,36,EB,21
430 DATA 50,7D,11,50
435 DATA 6D,01,15,00
440 DATA ED,B0,21,FF
445 DATA 40,DD,21,58
450 DATA 7D,23,E5,7E
455 DATA CD,00,42,DD
460 DATA E5,E1,5D,7C
465 DATA D6,10,57,06
470 DATA 00,DD,09,ED
475 DATA B0,ED,73,00
480 DATA 40,C3,39,6D
485 DATA ED,7B,00,40
490 DATA E1,18,DE,E1
495 DATA ED,4B,02,40
500 DATA D9,C3,89,BE
505 DATA 22,D7,42,7C
510 DATA D6,10,67,22
515 DATA FB,42,22,32
520 DATA 43,E5,7C,D6
525 DATA 10,67,22,DA
530 DATA 42,E1,2B,2B
535 DATA 2B,22,E3,42
540 DATA 23,22,E6,42
545 DATA 11,09,00,19
550 DATA 22,03,43,11
555 DATA 10,00,19,22
560 DATA 0B,43,11,00
565 DATA 10,19,22,08
570 DATA 43,11,08,00
575 DATA 19,22,17,43
580 DATA F3,D9,ED,43
585 DATA 02,40,C9
590 '
600 '**** KEY ****
610 '
620 y=0:x=&4100:RESTORE 740
630 WHILE a$<>"00"
640 READ a$:y=y+VAL("&"+a$)
650 POKE
x,VAL("&"+LEFT$(a$,1))
660 POKE
x+1,VAL("&"+RIGHT$(a$,1))
670 x=x+2:WEND
680 '
690 '------------------------
----------
700 '
```

Ramparts

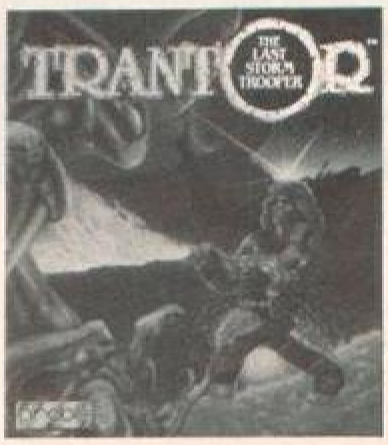
```
1 ' Ramparts - tape
2 ' by Phil Howard
3 ' Amstrad Action June 88
710 IF y=4690 THEN 810
720 PRINT"ERROR IN KEY":END
730 '
740 DATA 11,21,EA,17
745 DATA 42,65,2E,45
750 DATA B4,61,B2,39
755 DATA 55,2E,54,61
760 DATA 51,89,B1,56
765 DATA 5B,D4,94,8C
770 DATA 13,21,81,17
775 DATA 45,14,5B,17
780 DATA 3A,14,DA,61
785 DATA 41,65,65,C1
790 DATA A2,11,7A,41
795 DATA AC,41,21,BD
800 DATA 64,14,00
810 '
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 910
850 FOR x=&BE80 TO &BE9D
860 READ a$:a=VAL("&"+a$)
870 POKE x,a:y=y+a:NEXT
880 IF y=3770 THEN 960
890 PRINT"ERROR IN
CHEAT":END
900 '
910 DATA 21,A9,94,CD
915 DATA 44,43,C3,D5
920 DATA 42,21,92,BE
925 DATA 22,62,9E,C3
930 DATA CC,9C,CD,66
935 DATA 9E,3E,00,32
940 DATA 83,68,32,E1
945 DATA 68,C9
950 '
960 MEMORY &1FFF
970 LOAD"RAMPARTS"
980 MODE 1:PRINT"Don't
Panic..this takes FOREVER..
990 CALL &BE80
1000 END
```



Trantor

```
1 ' Trantor - disk
2 ' by Phil Howard
3 ' Amstrad Action June 88
710 IF y=1696 THEN 800
720 PRINT"ERROR IN KEY":END
730 '
740 DATA 1D,1B,E5,36
745 DATA 85,91,4B,45
750 DATA 45,54,A5,76
755 D ATA 11,C1,1E,21
760 DATA A2,40,00
770 '
780 '
790 '
800 '
810 '
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 900
850 FOR x=&BE80 TO &BEAA
860 READ a$:a=VAL("&"+a$)
870 POKE x,a:y=y+a:NEXT
880 IF y=4356 THEN 960
890 PRINT"ERROR IN CHEAT":END
900 DATA 21,38,7A,CD
905 DATA 43,43,C3,D5
910 DATA 42,21,92,BE
915 DATA 22,4B,7F,C3
920 DATA A2,7D,21,50
925 DATA 00,22,26,AA
930 DATA 11,A4,BE,EB
935 DATA 01,07,00,ED
940 DATA B0,C3,24,A9
945 DATA AF,32,14,16
950 DATA C3,00,01
960 MEMORY &1FFF:|DISC
970 LOAD"DISK":'** TRANTOR **
980 MODE 1:PRINT"Don't
Panic..this takes FOREVER..
990 CALL &BE80
1000 END
```

```
1 ' Trantor - tape
2 ' by Phil Howard
3 ' Amstrad Action June 88
710 IF Y=5230 THEN 840
720 PRINT"ERROR IN KEY":END
730 '
740 DATA 14,2B,19,E5
745 DATA D1,13,6C,55
750 DATA 55,D4,96,3A
755 DATA A1,14,BE,A7
760 DATA E4,1C,81,C1
765 DATA 48,45,15,A5
770 DATA 12,13,15,65
775 DATA 14,52,4B,47
780 DATA B1,55,19,6E
785 DATA D1,B4,B9,52
790 DATA 62,87,61,41
795 DATA 2B,31,BA,C4
800 DATA 8D,4A,00
810 '
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 900
850 FOR x=&BE80 TO &BEAA
860 READ a$:a=VAL("&"+a$)
870 POKE x,a:y=y+a:NEXT
880 IF y=4261 THEN 960
890 PRINT"ERROR IN CHEAT":END
900 DATA 21,21,75,CD
905 DATA 43,43,C3,D5
910 DATA 42,21,92,BE
915 DATA 22,21,7F,C3
920 DATA 94,7D,21,50
925 DATA 00,22,1B,AA
930 DATA 11,A4,BE,EB
935 DATA 01,07,00,ED
940 DATA B0,C3,24,A9
945 DATA AF,32,14,16
950 DATA C3,00,01
960 MEMORY &1FFF
970 LOAD"TRANTOR"
980 MODE 1:PRINT"Don't
Panic..this takes FOREVER..
990 CALL &BE80
1000 END
```



720°

```
1 ' 720 - DISK
2 ' BY PHIL HOWARD
3 ' AMSTRAD ACTION JUNE 88
710 IF Y=1984 THEN 800
720 PRINT"ERROR IN KEY":END
730 '
740 DATA 18,65,BD,91
745 DATA B3,21,34,D1
750 DATA CE,25,4B,7A
755 DATA 54,91,54,1A
```




```
760 DATA 61,B0,00
770 '
780 '
790 '
800 '
810 '
820 '**** CHEAT ****
830 '
840 Y=0:RESTORE 910
850 FOR X=&BE80 TO &BE99
860 READ A$:A=VAL("&"+A$)
870 POKE X,A:Y=Y+A:NEXT
880 IF Y=3034 THEN 960
890 PRINT"ERROR IN CHEAT":END
900 '
910 DATA 21,41,72,CD
915 DATA 44,43,C3,D5
920 DATA 42,21,92,BE
925 DATA 22,C3,77,C3
930 DATA D2,75,21,B8
935 DATA 80,36,00,C3
940 DATA A0,0F
950 '
960 MEMORY &1FFF:|DISC
970 LOAD"DISK":'** 720 **
980 MODE 1:PRINT"DON'T
PANIC..THIS TAKES FOREVER..
990 CALL &BE80
1000 END
```

Solomon's Key

```
1 ' Solomon's key - tape
2 ' by Phil Howard
3 ' Amstrad Action June 88
710 IF y=4856 THEN 810
720 PRINT"ERROR IN KEY":END
730 '
740 DATA 11,DA,81,1A
745 DATA 21,87,6A,51
750 DATA 68,3C,12,B4
755 DATA E3,A5,52,15
760 DATA 55,11,45,11
765 DATA 1B,42,41,4C
770 DATA 53,97,42,5B
775 DATA E9,48,6C,51
780 DATA 26,51,44,57
785 DATA 5B,41,E4,5A
790 DATA B6,B2,D6,25
795 DATA 46,61,17,D4
800 DATA 19,A1,00
810 '
820 '**** CHEAT ****
830 '
840 y=0:RESTORE 910
850 FOR x=&BE80 TO &BE9D
860 READ a$:a=VAL("&"+a$)
870 POKE x,a:y=y+a:NEXT
880 IF y=3207 THEN 960
890 PRINT"ERROR IN CHEAT":END
900 '
910 DATA 21,39,7d,CD
915 DATA 44,43,C3,D5
920 DATA 42,21,92,be
925 DATA 22,31,87,c3
930 DATA 5d,85,cd,a0
935 DATA 8c,3e,7f,32
940 DATA 47,01,32,60
945 DATA 07,c9
950 '
960 MEMORY &1FFF
970 LOAD"SOLOMON'S KEY"
980 MODE 1:PRINT"Don't
Panic..this takes FOREVER..
990 CALL &BE80
1000 END
```



THE PILGRIM

Sheer magic! Despite the fact that the Pilgrim is at this moment languishing in the hot Indian sun, he still manages to bring you a preview of Electronic Art's Bard's Tale, a bumper selection of tips, AND the next instalment of the d-i-y adventure course. Put down that paratha and curry on in...

Role on 1988!

Readers of this column may not have heard the rather unpleasant expression "ghetto software". It is applied to categories of computer entertainment which appeal only to a few oddballs. People of little wit and less understanding have been content to consign adventures (along with strategy, role-playing software, and war-gaming) to this imaginary ghetto and software houses, sadly, have followed suit. But hold your breath, because all this is about to change...

The landmark development, scheduled for later this year in the UK, but already out in the USA, is SSI's computer version of Dungeons and Dragons. This long-awaited release comes at a time when American software houses are waking up to the fact that the fastest growing sector of the software scene is the role-playing/graphic adventure market. Activision, Electronic Arts, Mirrorsoft and Telecomsoft are all now moving deeper into this area, with programs coming hard and fast onto the 16-bit market and appealing to more adventure players than ever before.



One of the latest state-of-the-art role-play games, Dungeon Master from FTL/Mirrorsoft on the Atari ST. Games like these are carving out new audiences for adventure software, and the Amstrad market can only benefit.

The benefits of this sudden interest in the RPG/adventure market are undoubtedly going to be felt by us Amstrad owners. First evidence is Electronic Arts' conversion of *The Bard's Tale* for the Amstrad, making it the only role-playing game of note on the system, apart from a very old (and now almost unavailable) title from Wintersoft called *Ring of Darkness* and Infogrames' disappointing release, *Mandragore*. It's very likely that other programs of a similar nature will be appearing on the system in the next few months.

Role up! Role up!

So what's it all about? Briefly, a role-playing computer game, like a traditional adventure, gives you the ability to move through a number of locations. Typically the commands available are very limited but allow you to pick up objects, use them in battle, trade them with other characters, and store them (if they're valuable) as treasure.

What makes the games so compelling, however, is that instead of controlling just one character, you generally have command of a "party", consisting of between four and six computer-created characters. What's more, each member of your party possesses certain attributes ("strength", "intelligence", "dexterity" and so on) that determine his or her character and performance potential.

These attributes, together with the fact that they alter during play as the character gains "experience", make it possible to identify quite closely with the members of your party. You can give them names, determine to some extent their characteristics, and then watch them fight, find treasure, trade, explore, and eventually die in a game that can take a long time to complete.

Spells and Songs

The Bard's Tale is a typical role-playing game with one or two unique features. First, it was unusual when first released to show a graphics window that revealed your surroundings and scrolled appropriately each time you moved in a certain direction. Second, the role of magic in the game (an essential feature of most RPG's) was very significant, with a large number of spells, some of which are quite extraordinary.

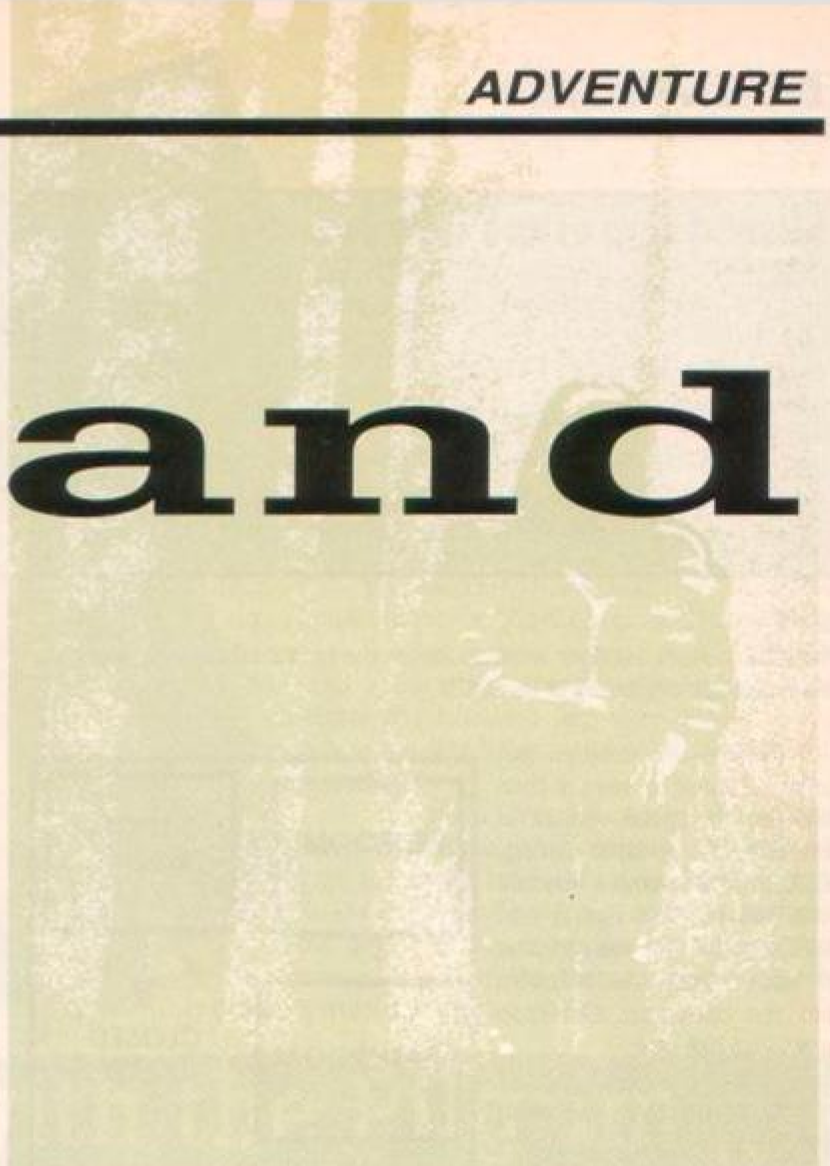
Gameplay in *The Bard's Tale* consists largely of exploration and conflict. Combat systems operate on a simple musclepower basis, with an element of luck and, of course, much potential for magical intervention. Defeat your enemies and you are rewarded with more experience points and, likely as not, gold. Lose and some (or all) of your party may die.

The death of a character isn't as traumatic as it need be, for the simple reason that the program allows you to save individual characters on disk or tape, swapping characters with different attributes in and out of your party. This way you can develop an army of companions to accompany you on different journeys into the dungeons below the city of Skara Brae. Some parties might feature more experienced magic users, others might rely on muscle – the most successful ones combine both.

Bard's Tale looks like being a major release for the Amstrad. Check out next month's definitive review...



Room to Expand



The third in the Pilg's new series on adventure programming.

This month the Pilg shows you how to add new locations to your adventure, and includes some helpful notes on the program as a whole. If you haven't managed to keep up, don't despair - you can get the complete listing so far posted to you – full details later.

Adding a new location to our game is simplicity itself. You'll remember that in the last module we added in three doors, so that our map looked like this:

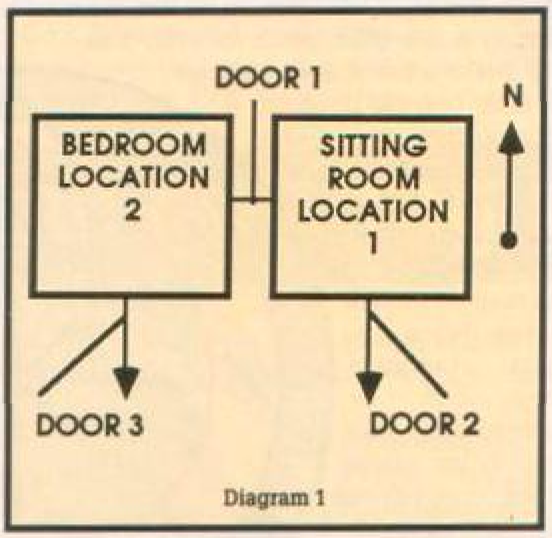


Diagram 1

You'll notice that doors 2 and 3 don't actually lead anywhere yet. To stop players ending up in limbo, we've simply implemented them as closed doors which, since we haven't introduced an "OPEN" command yet, solves the problem without any difficulty.

However, it would be nice to open these doors and tag some new locations onto them. That's what we're going to do, and when we've finished our map will look like this:

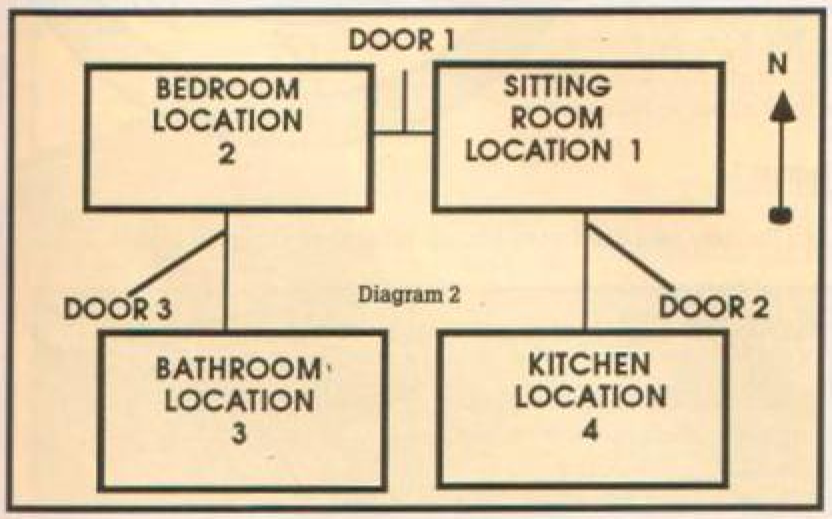


Diagram 2

The process of tagging a new location onto an existing door is simplicity itself. Here's what you have to do:

Step 1.

Tell the program we're adding in a new location by increasing the value of nlocations in line 60.

Step 2.

Add a new location description followed by an exitcode to the list of location data entries starting in line 5100.

Step 3.

Open the connecting door by changing the DOORSTAT value, stored in line 6000. Remember that our door status values are:

0	1	2
LOCKED	CLOSED	OPEN

Diagram 3

Step 4.

Check that the data for door connections in lines 2360 and following is correct. Remember that the data in this line takes the format "door number followed by two numbers indicating the locations connected".

Build your own map!

This month we've simply added two new locations onto existing doors from existing rooms. Adding a new door to a location and a new location on the other side of it is also very easy and we'll be doing it next month, adding an "upstairs landing" north of the sitting room.

However, you should be able to work out how to do it yourself. Remember that in addition to the five steps covered in this month's article, you will also need to tell the program that you're adding in another door, by increasing the value of NDOORS in line 60 as well as the value of NLOCATIONS. You'll also have to add in a new DOORSTATus value in line 6000, telling you whether it's open or closed (better have it open for now). Otherwise, you shouldn't encounter any problems. If you do, fear not – all the answers are in next month's AA!

Remove the bone

Last month we gave an example of customisation, putting a bone in the bedroom. You should note that customised additions to the program will create a new version (YOUR game) that may not be entirely compatible with the printed listings (OUR game). This should be obvious, but just in case you're confused, just remember that the listings printed in BOXES in each issue are all compatible. Any other lines printed in the articles are there for purposes of illustration – don't SAVE them along with the boxed listings – though of course you can always SAVE your own games under separate filenames – in fact it's precisely that process of creating your own listings that the series is all about.

Missed one of the instalments?

Haven't got a complete listing to add this month's module to? Simply send three first class stamps plus a self-addressed envelope to:
Pilg Listing
Amstrad Action
4 Queen Street
BATH
BA1 1EJ
Please note that the photocopies of the complete Pilg Programming course to date are no longer available – it's listings only from now on.

Step 5.
We need to store the door information for the new location as a new data line in the list beginning at line 5820.

Module One does all this for you. Type it in, save it, then load in your saved version of last month's updated listing. MERGE this month's module with last month's listing and RUN it. You'll find you can now go south from the bedroom into the bathroom. Our map now looks like this:

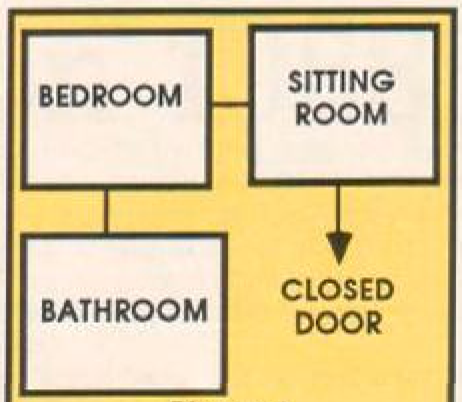


Diagram 4

Now see if you can enter a location south of the sitting room, with the description "the kitchen. Words could not describe the mess in here. Luckily, no-one who could speak would want to to describe it anyway...". The answer is contained in Module Two. Let's go through the steps again one by one to make sure you've got it right.

1. Alter the nlocations value in line 60 by one. That's easy.
2. Add the location description onto the list after line 5120. The only tricky bit here is working out the exitcode. Remember that each direction has a code in the range 1,2,4,8...128. By using these values we can encode any combination of exits in eight directions into one binary number. Remember that an 8-bit binary number takes the following form:

128 BIT POSITION	64 BIT POSITION	32 BIT POSITION	16 BIT POSITION	8 BIT POSITION	4 BIT POSITION	2 BIT POSITION	1 BIT POSITION

Diagram 5

Now, here's how the directions are encoded:

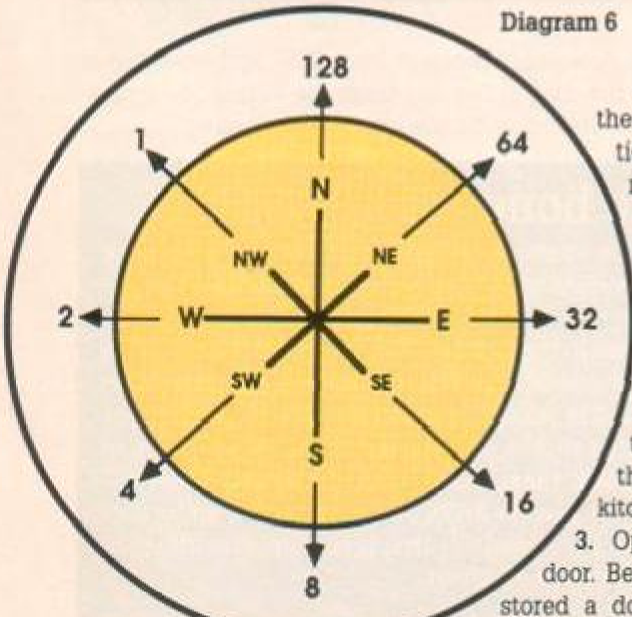


Diagram 6

All you do is add up the values for each location in which movement is possible. Since we're not dealing with new doors at the moment, there's only one possible exit from the kitchen – north into the sitting room. So the exitcode for the kitchen is 128.
3. Open the connecting door. Because we've already stored a door status value for this door in line 6000, all we have to do is change the value for the door from 1 (closed) to 2 (open). The door status values are stored in numerical order.
4. Check the data for door connections in line 2360 is correct. We don't have any data for door number 2 in this list, so add it on the end followed by the numbers of the locations it connects. Last month the line read:

```
2360 DATA 1,1,2
```

Then, in module one this month we added on the data for door number 3:

```
2360 DATA 1,1,2,3,2,3
```

...and now we want to add on the data for door number 2:

```
2360 DATA 1,1,2,3,2,3,2,1,4
```

5. Finally, whenever you enter this location in the game, the program will need to know not only in which direction you can move (stored in the exitcode variable in step 2 above) but also, when you do move, which door you are trying to go through – so that it can check to see if it's closed, locked, or whatever. To do this, we need to add a line to the list starting in line 5820, which for every location stores a list of door numbers for each possible direction. A door-number of zero indicates that there is no door there. The door numbers are entered anti-clockwise, starting at direction NW, so that during program execution they can be indexed along with the location values, which – as you can see from diagram 6 above, also start from the NW. So in the case of the kitchen, the data would be worked out as follows:

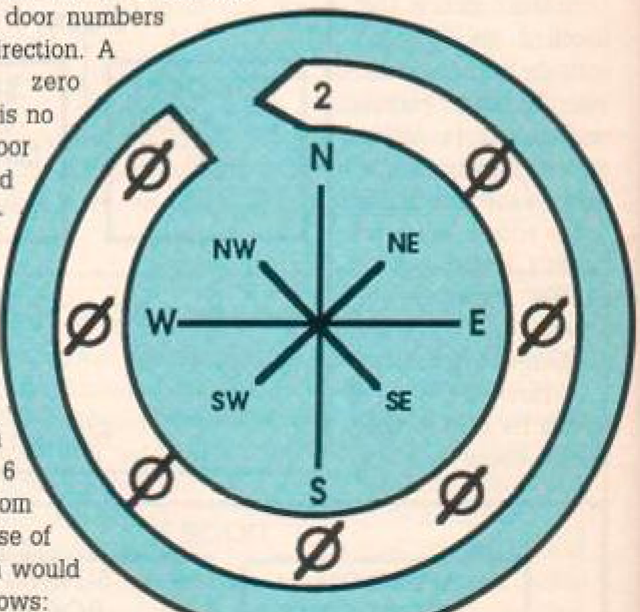


Diagram 7

...and the new data line for the kitchen entered as shown in Module 2.

Module One

```
60 nobnames=3: nobjects=2: ndirections=16: nverbs=2:
nverbs=2: nlocations=3: maxwords=4: ndoors=3
2360 DATA 1,1,2,3,2,3
5120 DATA "the bathroom. This is a room where people simply
transfer the dirt   from their bodies to the floor, the
walls, the bath, the sink, and the shaving  mirror.",128
5822 DATA 0,0,0,0,0,0,0,3
6000 DATA 2,1,2
```

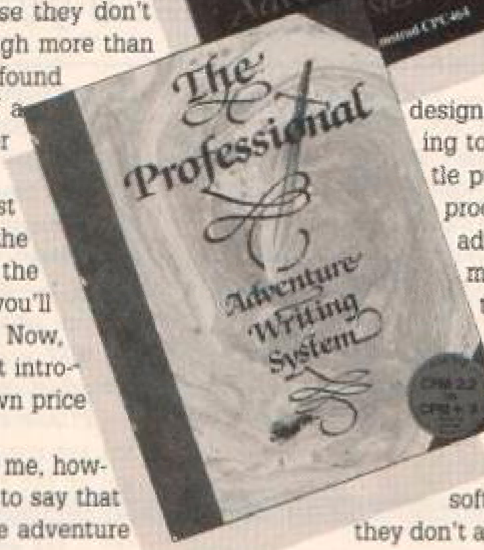
Module Two

```
60 nobnames=3: nobjects=2: ndirections=16: nverbs=2:
nverbs=2: nlocations=4: maxwords=4: ndoors=3
2360 DATA 1,1,2,3,2,3,2,1,4
5130 DATA "the kitchen. Words could not describe the mess
in here. Luckily,     no-one who could speak would want to
describe it anyway...",128
5823 DATA 0,0,0,0,0,0,0,2
6000 DATA 2,2,2
```

PERRY'S PIECE

Andrew Perry's Piece, in conjunction with Pilg's Postscript, is a short, monthly chatter-box that takes a look at some aspect of the adventuring scene. You can write to Andrew c/o The Pilgrim, 4 Queen Street, Bath, BA1 1EJ.





Why is it that Gilsoft, along with many other more notable software companies, make it impossible to buy from them because they don't advertise in the Amstrad magazines? I had to look through more than six years worth of old tatty computer magazines until I found their address – which was well hidden in the corner of a page of a computer weekly. I'm sure that many other would-be customers must have the same problems.

It's all the more depressing because the *Quill* is a must for the adventure writing beginner, albeit 5 years old, as the principles within it are universal – whether you use the Gilsoft product or go to the trouble of devising your own, you'll find yourself intuitively operating along the same lines. Now, with the availability of *PAW*, the *Quill* remains an excellent introduction to it, and an affordable one at the new knock-down price of £3.99.

There's one thing about these packages that niggles me, however. It's one thing for the software house's blurb writers to say that you will be able to produce your own 100% machine code adventure games with no programming knowledge, but quite another when it comes to the programming itself after you've parted with your hard-earned cash.

The real problem is the documentation, which with most of this kind of software leaves so much to be desired. After buying *GAC* it was not until I bought *Quill* more than 18 months later that I began to understand the concepts behind the programming of an adventure game. This was due to the lack of a reasonable example game/file and step-by-step guide to the *GAC*'s commands and the design of the command structures themselves. Also, having to fiddle with those ghastly Lenslok devices did little put me in a better frame of mind. With *Quill* I had produced a playable, if rather simple, 9 location adventure the following day after buying it, due mainly to the step-by-step adventure included with the manual.

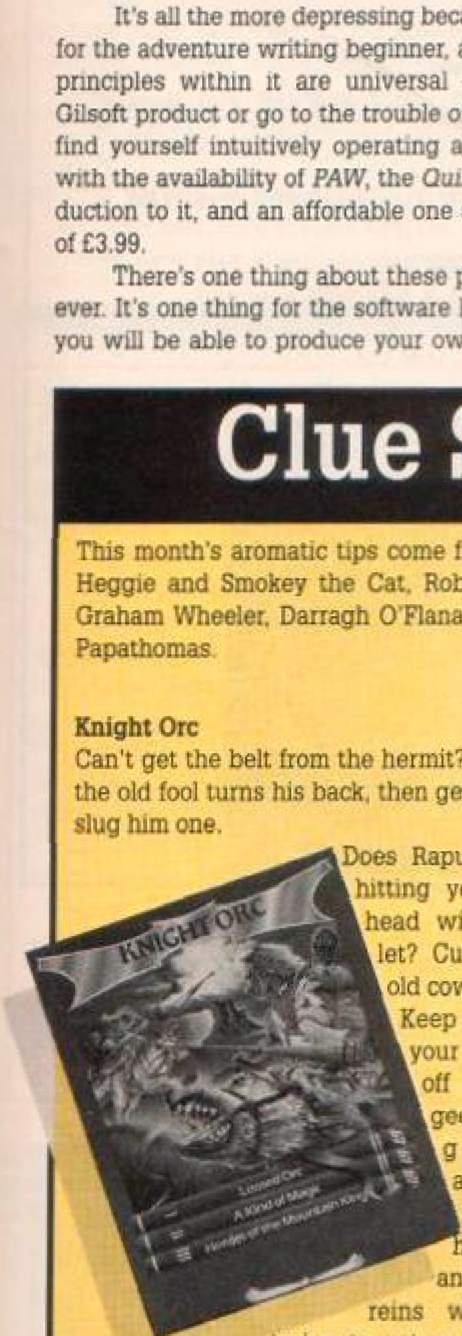
Doubtless there are people who will disagree and maintain that one package is far superior to another, but I don't think anyone's going to argue that – with only a very few exceptions – the quality of documentation we get with out software is appalling. But then perhaps that's why they don't advertise it in the first place...

Clue Sniffing with the Pilgrim

This month's aromatic tips come from Emma Heggie and Smokey the Cat, Robert Green, Graham Wheeler, Darragh O'Flanaghan, Paul Papathomas.

Knight Orc

Can't get the belt from the hermit? Wait until the old fool turns his back, then get Denzyl to slug him one.



Does Rapunzel keep hitting you on the head with a mallet? Cut the silly old cow's hair off.

Keep getting your head cut off by the geezer in the green armour? Do his horse in, and grab the reins while he's trying to get up. Drop the ace while you're at it otherwise he'll give you a lot of hassle later on.

Can't get out of the castle? You're going to rob the place, so don't bother with the front door. Tie the rope to the ivy to get in, and get out the same way.

Is the hunter giving you gyp? A trip-wire should deal with him, but watch out for his whip. Just grab the lassoo and run.

Venom

Examine the scurr-marks and then examine the bushes in the clearing to find a log. Move the log, and you will reveal a cave, in which you find a body.

Mordon's Quest

If it's invisible, spray it.

Rigels Revenge

To open the utility cupboard, visit the empty encampment and then go south and east while being pursued by jetcopter. Press the switch. You can't charge the stun gun until part 2 – but always carry it with you in Part 1. Don't get caught – once netted you're finished.

Very Big Cave Adventure

The Utility belt is full of anagrams. Try PARAQUAT and BICARBONATE.

Examine and get the rabbit to trigger the next stage. Go to the Gotham City picture gallery before the jester and examine the bubbles. Gas the jester with the canister.

Souls of Darkon

Climb tree, look, and get coin and ring.

Examine barrel and drink mead.

Get mushroom and eat it. Look and get bottle.

Get helmet from dead warrior.

Fill bottle with water outside blacksmiths.



Gnome Ranger

To get past the hedge: Greenslave, wait, push rock, push rock, then type push rock, push rock.

The penguin will join you on the icefloe if you have her egg – then to reach iceberg say penguin, paddle icefloe east.

To get the eagle's help, hit chicks.

To get the treehouse across the road by cave mouth, drop compost.

To help the yeti, put cloudstuff in snowshoes.



Guild of Thieves

To get money for a bet on the rat race, examine settee, examine cushion, open cushion and get note.

Break coal to find a fossil treasure.

Get some berries in the graveyard.

Put lute in sack before leaving mill.

Try pushing the statue about!

Get flies in jar and then lure spider into it.

There's a ruby in the red bottle.

To enter the undertakers', break the door.

Shake the palm tree to get the coconut, but don't be greedy.

Lurking Horror

In the lift open the panel to find flashlight.

To get rid of rats, hit valve with crowbar, then when you see them hit valve with crowbar again.

TYPE-INS

Utility type-ins to make your micro move

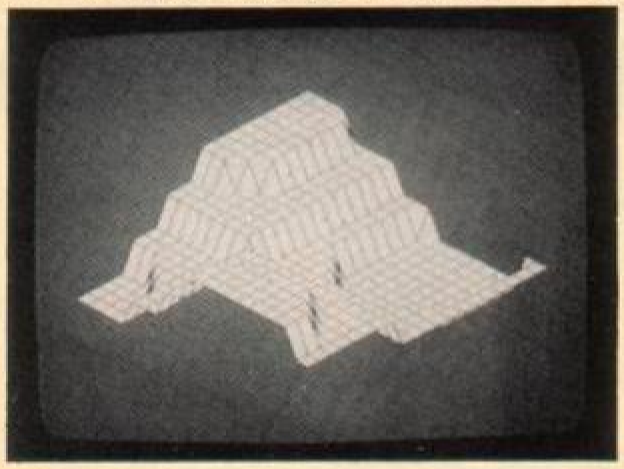
3D Hidden Line Removal Graph

This program, courtesy of **John Valentine** of Eccles, Manchester, produces a 3D graph from a mathematical equation. It uses the fill command and so only works as listed on the 664 or 6128.

464 users should leave out all the **FILL** commands in line 310. This takes away the "solid" look of the graph, but that's the price you pay for not having the command.

Change the mathematical equation in line 150 to get a totally different graph.

```
70 ' 3D HIDDEN LINE REMOVAL GRAPH
80 ' By John Valentine
90 ' Amstrad Action June 88
100 MODE 1:BORDER 13:INK 0,13:DEG
110 INK 1,26:INK 2,9:INK 3,9
120 DEFINT a-j,l-z:DIM g(21,21)
130 FOR x=0 TO 21:FOR y=0 TO 21
140 n=20-x:m=20-y
145 ' ## EQUATION LINE
150 kh=1.6:k=(x-11)^2+(y-11)^2:g(x,y)=(COS(k*8)/(0.01*(k+2))*3+40)
    *kh-54
160 NEXT:NEXT
170 FOR x=20 TO 1 STEP -1
180 FOR y=20 TO 1 STEP -1
190 xx=-x*16+y*16:yy=x*8+y*8
200 ORIGIN xx+320,yy-16
210 x(1)=-16:x(2)=0:x(3)=16:x(4)=0
220 y(1)=g(x+1,y):y(3)=g(x,y+1)
230 y(2)=8+g(x+1,y+1):y(4)=g(x,y)-8
240 GOSUB 270
250 NEXT:NEXT
260 GOTO 260
265 ' ## DRAW SOLID QUADRILATERAL
270 f=0:ax=0:ay=0:g=20:h=20
280 FOR a=1 TO 5:n=a:IF n=5 THEN n=1
290 IF f=0 THEN f=1:MOVE x(n),y(n),2 ELSE DRAW x(n),y(n):ax=ax+x
    (n):ay=ay+y(n)
300 NEXT:ay=ay/4:ax=ax/4
310 n=0:f1=0:MOVE ax,ay:ay1=ROUND(y(2)+y(4))/2:MOVE 0,ay1:FILL 0:
    FILL 1:FILL 0:FILL 1
320 f=0:FOR a=1 TO 5:n=a:IF n=5 THEN n=1
330 IF f=0 THEN f=1:MOVE x(n),y(n),3 ELSE DRAW x(n),y(n)
340 NEXT:RETURN
380 ' ### EXAMPLE REPLACEMENT FOR LINE 150
400 ' kh=36:g(x,y)=INT(SIN(x*13)*COS(y*10.5)*2)*kh+40
```



Anagrams

Gavin Manning of London has written an anagrams program with a novel twist. Instead of looking for all the letter combinations of a given word, it scans through a dictionary to see if anything can be taken out of the given word.

To add more words to the dictionary, simply add more **DATA** lines after line 500.

```
10 'ANAGRAMS
20 'Gavin Manning
30 'Amstrad Action June 88
40 MODE 1:INPUT"Anagram:",a$:a$=UPPER$(a$)
50 INPUT "Screen or printer:",s$
60 s$=UPPER$(s$)
70 IF LEFT$(s$,1)="S"THEN str%=0 ELSE IF LEFT$(s$,1)="P" THEN
   str%=8 ELSE 50
80 INPUT "Maximmm word length:",maxl%
90 IF maxl%<1 THEN 80
100 INPUT "Minimmm word length:",minl%
110 IF minl%>100 THEN PRINT "That's a bit silly !  ";:FOR d=1 TO
    2000:NEXT d:PRINT "Oh well!":FOR d=1 TO 1000:NEXT d
120 'Check the minimmm word length
130 IF minl%>maxl% THEN PRINT "That's too silly ! Having a greater
    minimmm word length than maximmm word   length !  Please
    re-enter both of them.":FOR d=1 TO 3000:NEXT d:GOTO 80
140 MODE 2:PRINT #str%,STRING$(80,"-"):PRINT#str%,a$:PRINT#str%:
    PRINT#str%,STRING$(80,"-"):PRINT#str%
150 WINDOW #0,1,80,7,25
160 t!=TIME
170 'Read the next word and check it is not the end of the data
180 READ w$
190 w$=UPPER$(w$)
200 IF w$="***THE END***"THEN 400
210 ''Save' the read-in word and the original anagram as they will
    both be corrupted by this routine.
220 ow$=w$:oa$=a$
230 'Check length of read word
240 IF LEN(w$)>maxl% OR LEN(w$)<minl% OR LEN(w$)>LEN(a$) THEN 180
250 'Knock out any corresponding letters
260 FOR l%=1 TO LEN(w$)
270 z%=INSTR(a$,(MID$(w$,l%,1)))
280 IF z%<>0 THEN MID$(w$,l%,1)="*":MID$(a$,z%,1)="*"
290 NEXT l%
300 'If all the letters in the read-in word have been knocked out
    then you can get it from the 'anagram'.
310 s%=0
320 FOR l%=1 TO LEN(a$)
330 IF MID$(a$,l%,1)="*" THEN s%=s%+1
340 NEXT l%
350 'If you can get it from the 'anagram' then print it.
360 IF s%=LEN(w$) THEN PRINT #str%,ow$;".  ";
370 'Reset the anagram to it's original state
380 a$=oa$
390 GOTO 180                      :'Loop back
400 PRINT (TIME-t)/300:END        :'Print the time taken
410 'The words to search through
```

```
20 DATA Hello,My,Name,Is,Gavin
430 DATA and,it,or,awe,ewe,them,he,she,us,we,i,you,a,mane,man,men,
    women,woman,gentle,gentleman,gentlemen,lady,ladies,lord,lord,
    penny,pennies,tea,eat,ate,water,club,clip,over,leaf,overleaf,
    tape,disc,base,bases,based,basic,basically,also,as,well
440 DATA on,in,top,with,for,who,which,where,when,to,from,skirt,
    trouser,skirts,dress,dresses,piano,siesta,mouse,tar,rat,art,
    pat,apt,tap,tape,tide,wave,rave,ride,tire,type,pot,option,
    king,queen,grand,hand,feet,foot,leg,head,hair,arm,hands,
    finger,glue,pens
450 DATA pencil,pencils,pen,sharp,knife,knives,wife,husband,band,
    drum,cymbal,greed,grit,hit,the,this,that,other,wreck,grope,
    desk,wood,drive,car,bike,house,paper,speaker,speak,print,date,
    day,week,month,year,manual,instruction,fire,place,left,right,
    centre
460 DATA front,back,rear,behind,side,bottom,up,down,fast,slow,fat,
    tough,hide,hid,deftly,wedding,red,blue,yellow,is,was,has,been,
    come,television,vision,phone,telephone,write,ink,magazine,
    book,cupboard,bin,waste,size,small,big,large,enormous,tiny,
    huge
470 DATA curtain,window,glass,floor,ceiling,sweet,wheat,weak,bear,
    rib,rub,boar,bore,tor,rot,ore,lea,star,board,cup,saucer,coin,
    money,note,play,sleep,joy,stick,branch,rich,poor,poverty,
    strict,stricken,you,inn,inspire,spire,possible,spot,cafe,
    coffee,cake
480 DATA fruit,cherry,banana,apple,peach,ache,clean,vaccuum,hip,
    tip,lip,sip,dip,rip,nip,pip,job,equip,more,less,power,mop,
    bucket,space,sand,beach,sea,see,salt,land,earth,sky,dirt,
    filth,flannel,libel,po,bidet,toilet,seat,bench,bath,rug,mat,
    hearth,heart
490 DATA loop,soon,shine,moon,sun,son,daughter,father,mother,nan,
    grandad,uncle,aunt,great,time,old,new,ancient,antique,
    language,age,birth,death,beer,drink,food,stomach,brain,eye,
    nose,ear,nail,battery,cell,infantry,soldier,noose,rope,string,
    boss,worker
500 DATA loss,loose,lost,have,had,gone,shute,slide,radio,clock,
    badge,poster,post,reap,tramp,ream,onyx,cynicle,oracle,text,
    finished,finish,start,end,beginning,word,cable,loop,pool,pond,
    lake,mountain,wrote,toe,ankle,click,country,county,region,
    prince,crown
65533 'It is best to keep the 'end-marker' data statement at the
      very end of the program as it is then very easy to add more
      words. If this statement is removed the program will not
      function properly.
65535 DATA ***THE END***
```

Encrypter

People often write in asking simple protection systems. Here is a program which sets up new commands to encode and decode blocks of memory.

To encode a block: `|SCRAMBLE,blockstart,length,"key"`

To decode a block: `|UNSCRAMBLE,blockstart,length,"key"`

The key is a two digit string like `"AB"` or `"ZH"`, and must be identical in both commands, otherwise the block of memory is corrupted. You have **Kevin Jones** from Hull to thank for this one.

```
10 'Scramble
20 'Kevin Jones
30 'Amstrad Action
40 CLS:INPUT "Location for Code(16390-49150) -";pq
50 IF pq<16384 OR pq>49152 THEN PRINT "ADDRESS NOT IN MAIN MEMORY
   BLOCK":STOP
60 MEMORY pq-1
70 FOR i=pq TO pq+134:READ a$
80 LET b=b+VAL("&"+a$)
90 POKE i,VAL("&"+a$):NEXT
100 IF b<>12396 THEN PRINT "Error in data":STOP
110 DATA 01,0A,40,21,12,40,CD,D1,BC,C9,16,40,C3,29,40,C3,3D,40
120 DATA 00,00,00,00,53,43,52,41,4D,42,4C,C5,55,4E,53,43,52,41
130 DATA 4D,42,4C,C5,00,CD,51,40,1A,EE,00,C6,00,12,01,01,00,E6
140 DATA FF,ED,42,C8,13,18,EF,CD,51,40,1A,D6,00,EE,00,12,01,01
150 DATA 00,E6,FF,ED,42,C8,13,18,EF,FE,03,20,2B,DD,66,01,DD,6E
160 DATA 00,7E,FE,02,20,20,23,4E,23,46,0A,32,44,40,32,2E,40,03
170 DATA 0A,32,42,40,32,30,40,DD,56,05,DD,5E,04,DD,66,03,DD,6E
180 DATA 02,C9,E1,3E,45,CD,5A,BB,C9
190 p=pq-&4000
200 FOR i=1 TO 11:READ a:a=a+p
210 LET b=PEEK(a+1)*256+PEEK(a):LET b=b+p
220 LET l$=LEFT$(HEX$(b),2)
230 LET r$=RIGHT$(HEX$(b),2)
240 POKE a,VAL("&"+r$)
250 POKE a+1,VAL("&"+l$)
260 NEXT
270 DATA &4001,&4004,&400A,&400D,&4010,&402A
280 DATA &403E,&4066,&4069,&406E,&4071
290 CALL pq
300 PRINT "COMMANDS READY"
```

Fame and fortune

Interested? Yes? Well, if you send us your programming masterpieces and they subsequently get published in these pages, you could stand to win £1ØØ. And your name would be seen by thousands of Amstrad addicts. What more could you ask for? Every person whose listing appears in the Type-Ins section is guaranteed anything from £1Ø to £1ØØ. What's the catch? None. We simply want your listings. Send them – together with your name, address and a jiffy bag (for return) – to **"Type-Ins", Amstrad Action, Future Publishing Ltd, 4 Queen Street, Bath, BA1 1EJ.**

If you plan to send a listing to be considered for publication, here are a few pointers:

- Make sure it's your own original, unpublished work.
- Use lower-case rather than capitals for variable names.
- REM statements make the program easier to understand.
- Do not use letters that look like numbers as variable names (O and Ø, l and 1 for example).
- Structure your program – divide it into sensible procedures.
- Avoid long multi-statements. Short lines make debugging easier.
- Please make sure your name and address is on every slip of paper, cassette or disk that you send us

More Patterns

Yes, more strange and weird effects, this time from **David Eccleston** of Birmingham. Enter a number from 1 to 100 for a curvaceous matrix to ripple into being.

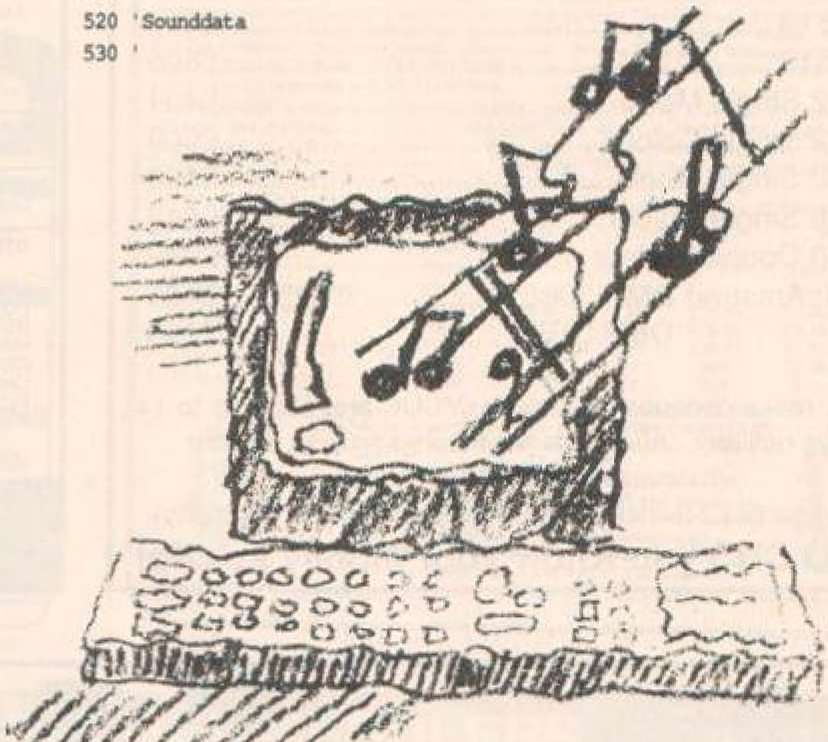
```
10 'Pink Shells
20 'David Eccleston
30 'Amstrad Action June 88
40 MODE 1
50 INPUT "Choose a number from 1-100";s
60 IF s<1 OR s>100 THEN 50
70 MODE 1:INK 0,0:INK 1,8:INK 2,16:INK 3,7:BORDER 0:c=1
80 x=320:y=200:ORIGIN x,y:MOVER 85,0
90 FOR a=0 TO 20 STEP PI/35
100 IF a>7.5 THEN c=2:IF a>12.5 THEN c=3
110 b=a*s:d=a/s
120 MOVE 200*SIN(a),100*COS(a)
130 DRAW 10*COS(b),200*SIN(d),c
140 NEXT
150 GOTO 50
```

Rocking CPC

Ever looked at your Amstrad, and thought it was a bit square? Let me tell you, inside every CPC there's a rocker trying to get out.

This excellent listing from **Karolos Seeger** (Please contact us and tell us your address, Mr. Seeger) brings out the true artistic, boogie-woogie mentality of your Amstrad.

```
20 'Rocking CPC
30 'Karolas Seeger
40 'Amstrad Action June 88
50 '
60 MODE 1:BORDER 0:INK 0,0:INK 2,2:RANDOMIZE TIME:k=2:l=22
70 DIM ml(14),lm(14):ENV 1,15,-1,4:ENT -2,15,-5,8:ENV 2,15,-1,15:
   RESTORE 540:FOR a=1 TO 14:READ b,c:ml(a)=b:lm(a)=c:NEXT a:ENT
   3,2,-3,2,2,3,2
80 ENV 5,15,-1,2,15,1,2:ENV 4,15,-1,2,15,-1,2
90 ENV 6,15,-1,12:ENV 5,1,0,10,5,-1,2
100 LOCATE 1,22:PEN 3:PRINT CHR$(243);:LOCATE 40,22:PRINT CHR$
    (242);
110 GOSUB 630:a$="' ROCKING C P C '":b=4:c=1:e=3:GOSUB 120:a$=""+
    CHR$(164)+" by Metal Karo":b=16:c=3:e=2:GOSUB 120:a$="Greet
    ings to all Rock Fans":b=18:c=3:e=1:GOSUB 120:PEN 2:GOTO 130
120 d=20-INT(LEN(a$)/2):TAG:PLOT d*17.2-28,416-b*16,c:PRINT a$;:
    TAGOFF:PEN e:LOCATE d,b:PRINT CHR$(22);CHR$(1);a$;CHR$(22);
    CHR$(0):RETURN
130 atuk=0:eff=0:fog=0:vader=0
140 '
150 ' Main Program
160 '
170 lan=5:man=20:FOR a=1 TO 32:vader=vader+1:GOSUB 370:SOUND 1,0,
    man:SOUND 4,0,man:NEXT a
180 EVERY 8,1 GOSUB 700
190 RESTORE 430:de=0:atuk=atuk+1:man=20:vader=0:rop=0
200 READ a:IF a=15 THEN GOSUB 580:GOTO 200 ELSE IF a=16 THEN GOSUB
    590:GOTO 200 ELSE IF atuk=4 AND a=17 THEN 570 ELSE IF a=17
    THEN 190
210 IF atuk=4 THEN man=man-0.05:IF man<=15 THEN man=15
220 IF a=18 THEN rop=1:GOTO 200
230 vader=vader+1:fog=fog+1:IF fog=9 THEN fog=1
240 IF fog<4 THEN ty=1:yt=4 ELSE IF fog>4 THEN ty=4:yt=1
250 IF atuk>=3 THEN 280
260 IF atuk>=2 AND eff=1 THEN 280
270 SOUND ty,ml(a),man,15,1,1:SOUND yt,lm(a),man,15,1,1:GOSUB 370:
    GOTO 200
280 SOUND ty,ml(a),man,15,1,1:SOUND yt,lm(a),man,15,1,1:de=de+1:
    IF de<=3 THEN be=ml(a) ELSE IF de>=4 THEN be=lm(a):IF de>=8
    THEN de=0
290 IF atuk=2 AND rop=1 THEN 280
300 IF atuk>=3 AND rop =1 OR eff=0 OR eff=1 THEN 330
310 ON atuk-1 GOTO 320,330
320 SOUND 2,be+2,man,15,1:GOTO 200
330 SOUND 2,be/4,man,15,5,5:GOTO 200
340 '
350 ' Drums
360 '
370 IF vader=2 THEN 380 ELSE SOUND 2,0,man,0,4,,lan:RETURN
380 vader=0:luke=luke+1:IF luke =1 THEN han=1:lan=5 ELSE IF luke=2
    THEN han=9:lan=13 ELSE IF luke=3 THEN han=17:lan=1 ELSE IF
    luke=4 THEN han=25:lan=31:luke=0
390 SOUND 2,0,man,0,4,,han:RETURN
400 '
410 ' Bass
420 '
430 DATA 14,14,14,14,14,14,14,14,14,14,14,14,14,14,14,14,1,1,1,1,1
    ,1,1,1,4,4,4,4,7,7,7,7,1,1,1,1,1,1,1,1,4,4,4,4,7,7,7,7,1,1,1,1
    ,1,1,1,1,4,4,4,4,7,7,7,7,4,4,4,4,7,7,7,7
440 DATA 1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,4,4,5,4,6,4,5,4,7,7,8,7,9
    ,7,8,7,1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,4,4,5,4,6,4,5,4,7,7,8,7
    ,9,7,8,7,4,4,5,4,6,4,5,4,7,8,7,9,7,8,7
450 DATA 1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,10,10,10
    ,10,10,10,10,10,10,10,10,10,15
460 DATA 1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,7,7,8,7,9,7,8,7,7,7,8,7,9
    ,7,8,7,1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,10,10,11,10,12,10,11,10
    ,10,10,11,10,12,10,11,10
470 DATA 7,7,8,7,9,7,8,7,7,7,8,7,9,7,8,7,10,10,11,10,12,10,11,10
    ,10,10,11,10,12,10,11,10,7,7,8,7,9,7,8,7,7,7,8,7,9,7,8,7
480 DATA 1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,1,1,2,1,3,1,2,1,10,10,10
    ,10,10,10,10,10,10,10,10,10,16,18
490 DATA 13,13,13,13,13,13,13,13,7,7,7,7,7,7,7,7,13,13,13,13,13,13
    ,13,13,10,10,10,10,10,10,10,10,13,13,13,13,13,13,13,13,7,7,7,7
    ,7,7,7,7
500 DATA 10,10,10,10,4,4,4,4,1,1,1,1,1,1,1,1,17
510 '
520 'Sounddata
530 '
```



```
540 DATA 758,506,758,451,758,426,638,426,638,379,638,358,568,379
    ,568,338,568,319,506,338,506,301,506,284,379,253,758,760
550 '
560 'Effects
570 DI:SOUND ty,758,150,15,6,6:SOUND yt,506,150,15,6,6:SOUND 2,126
    ,150,15,6,6:EI:GOTO 130
580 DI:SOUND 1,379,80,15,2,2:SOUND 4,253,80,15,2,2:SOUND 2,255,80
    ,15,2,3:eff=1:luke=0:EI:RETURN
590 DI:SOUND 1,379,80,15,2,3:SOUND 4,253,80,15,2,3:SOUND 2,255,80
    ,15,2,3:eff=0:luke=0:vader=0:EI:RETURN
600 '
610 ' Synthesyther
620 '
630 FOR a=175 TO 275:PLOT 126,a,1:DRAW 500,a:NEXT a:DRAWR 0,-100,2
    :DRAWR -374,0:DRAWR 0,100:DRAWR 374,0:PLOT 502,279,3:DRAWR 0,
    -106
640 FOR a=126 TO 500 STEP 16.3:PLOT a,275,2:DRAWR 0,-100:NEXT a
650 FOR a=142 TO 500 STEP 16.3:FOR b=-4 TO 4 STEP 1:PLOT a+b,266,3
    :DRAWR 0,-50:NEXT b,a
660 RETURN
670 '
680 'Moving Note
690 '
700 PEN 2:no=237:LOCATE k,1:PRINT CHR$(32);:mogwai=INT(RND*2):IF
    mogwai=1 THEN l=l+1 ELSE l=l-1
710 IF l>=25 THEN l=25 ELSE IF l<=19  THEN l=19
720 IF k=39 THEN pio=1:no=242:PEN 1
730 IF pio=1 THEN k=k-1
740 IF pio=0 THEN k=k+1
750 IF k=2 THEN pio=0:no=243:PEN 1
760 LOCATE k,1:PRINT CHR$(no);:CALL &BD19:RETURN
```

Advertisers Index

The AA Buyers Guide

The Big 3 – Word-Processors, Databases and Spreadsheets

The big three types of serious software package are word-processors, databases and spreadsheets. Finding the right one for your needs and finances can be a tricky job. So to ease the difficulty we've compiled a list of all those still available and where to get them. For further information on databases and spreadsheets, see our comparative reviews in issues 30 and 29 respectively.

● Databases

AtLast Plus

Rational Solutions, £39.95 CPM+, 6128 only
Reviewed AA30

Improved from its first introduction AtLast Plus is a very powerful database. Data capacity is restricted only by disk size, and splitting fields into smaller pieces (elements) is supported. Printed output is very impressive. Calculations on fields is missing, unfortunately. Recommended for sheer processing ability.

Masterfile III

Campbell systems, £39.95 CPM+
Reviewed AA30

This can boast a really useful feature – parent/child records. This can tie records together, saving space and time. Screen layouts and reports are menu selected and not for the feint hearted, but the results possible are very good. Only field totals can be records, other calculations being unsupported.



Random Access Database

Minerva Systems, £29.95 disk only
Reviewed AA6

Very good mathematical and string operations make this a database to watch for. The random disk accessing gives it speed combined with power, plus you can opt for a 40 or 80 column screen. Only real niggle is that the program can be a little unresponsive to the keys.

Ultrabase

Beebugsoft, £14.95 tape, £17.95 disk
Reviewed AA6

This offering keeps all data in memory, which gives it fast search and sort options but a reduced capacity. Also the record format is fixed, which makes entry a little tiresome. Excellent price for a database though, as well as the rare fuzzy logic search option.



● Spreadsheets

Cracker

Newstar Software, £49.95 disk CPM+
Reviewed AA9

All spreadsheets must be created from scratch. Documentation is well written and the program's command sequences can soon be learned. Mathematical functions are very well catered for, and include random numbers. Regrettable that files are limited to 17K long – you soon run out of space, and formulae programming is not well implemented.



Mastercalc 128

Campbell Systems, £33 disk, 128K machines
Reviewed AA4

Of special interest is the ability to display two different parts of a spreadsheet at the same time. Also included are a notepad and calculator. It is easy to use, but the mathematical formulae can only consist of the four basic arithmetic options. It slows down as more data is entered. Of reasonable quality.

Matrix

Audiogenic Software, £34.95 disk
Reviewed AA18

This uses the disk to store data on, which gives it a good capacity but poor speed. The graphic options on Matrix make other spreadsheets look terrible. On screen prompts are rare, which makes it hard going at first. Mind you actual calculating power is good.

Supercalc 2

Amsoft/Sorcim, £49.95 CPM+
Reviewed AA4

Originally this program cost £200, but this was soon cut. The documentation is first class. Calculations can be determinative, that is they will be performed on whether or not a cell's contents match a given value. Help prompts are plentiful if needed and the arithmetic functions are excellent.

● Word-processors

Brunword 6128

Brunning Software, £16.50 tape, £25 disk
Reviewed AA24

The first issue of this word-processor was released a long time ago. It featured editing in 40 columns, user-unfriendliness and a right justify that couldn't be turned off.

Enter the 6128 version. 40 or 80 column mode. In-built spell checker, which is loaded into the extra memory. It can be used by expanded 128K machines. Superscript and subscript effects appear on-screen. And an awful lot more friendly than the original.

Bad points are minor. Some of the on-screen operations such as centering and cursor movement can be a little slow at times. And files cannot be loaded into other word-processors.

NewWord

Newstar Software Ltd, £69.95 CPM+
Reviewed AA7

This is similar to Wordstar in many respects, and the two can swap documents. It is so big

that two disk drives are needed to really make the most of it. Again the manual is huge. One of the more desirable features (and there are an awful lot of those) is the ability of the program to display printer font styles on screen. So you can tell just where you have left them on accidentally.

On the other side of the coin, this is just about the most expensive word-processor for the Amstrad. Packed with features, it runs at the same rather sluggish speed as Wordstar.

Pendown

Logotron, £19.50 disk only
Reviewed AA18

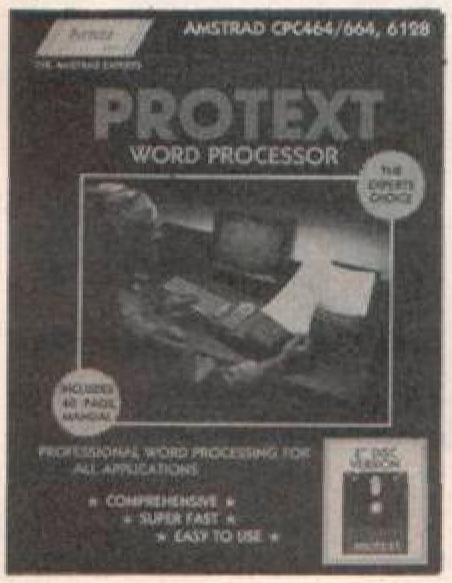
All other word-processors in this article are designed to be used by someone who is used to computers. Pendown is special, because it offers a complete tutorial in the theory and practice of the subject. It is a very open system, and clearly owes a lot to expensive DTP packages. Generally more people learn about the subject by means of Tasword, but if they used Pendown they'd have had a lot more fun. Built into the product are different fonts to print with. You can't see them on screen but they make the end result much better. This product lacks a lot of features which means that one day you will want to move on.

Protext

Arnor, £19.95 tape, £26.95 disk, £39.95 ROM
Reviewed AA3

This was one of the first word-processors written especially for the Amstrad. Protext is lightning fast at all tasks involving the screen. True merging from separate files and disks to the cursor position is very easy, and the program supports standard CPC RSX's like DISC, TAPE, CAT etc.

Having software on ROM where it is available at the touch of a key is excellent. Bad points are minor: the maximum file space is limited to machine memory. About 22K on disk and 38K for the ROM version. It's also a little daunting to get to grips with.



Pyraword

Discovery/Gremlin Graphics, £14.95 tape, £17.95 disk
Reviewed AA18

This program is similar in use to Pyradev, also from Discovery. When starting up it loads a profile of inks, printer codes and the character set. Word counting, changing disk drives etc – the housekeeping tasks of any program – are handily located. The program uses the extra memory of 128K machines for spooling printed documents and storing text.

Unfortunately true merging of files is not possible, and the control keys are a little strange at first. The margins cannot be set further apart than 80 columns, although placing a printer control character at the right hand side will allow wider documents to be printed.



Tasword

Tasman Software, 464, 464D, 6128, £19.95 tape, £24.95 disk
Reviewed AA1

Tasman have a written a veritable herd of different releases. 464 is the tape based version, exactly the same as Amsword. 464D has a few enhancements for a disk drive. 6128 makes full use of a 6128's extra memory. The latter pair include a mailmerge facility as standard. If you are new to word-processing then this is worth a look. It is very easy to get to grips with and comprehensive help screens are available when needed.

Many people never find a need to change from Tasword. But the screen operations are fairly slow, and reformatting text is done one word at a time. If you want speed, don't look here.

Wordstar

Micropro/Cumana, £49.95 disk only (CPM)
Reviewed AA1

Pocket Wordstar is what this really is. But anyone who has seen an incarnation of the real thing on a CPC will tell you it's a dinosaur. On 16 bit machines it runs reasonably fast, but on an Amstrad be glad that the faster Pocket version is available. One good feature is that files can be as big as the available space.

A fully professional program, Wordstar has a manual bigger than some printers and a layout reminiscent of mission control. Basically, if you want a function, it is in there...somewhere. On the other hand perhaps you have used it before and can appreciate its rather slow performance.

Mini Office II

Database Software, £14.95 tape, £19.95 disk
Reviewed AA6

Finally, if you don't need full specification programs Mini Office II is a budget buy. For your pennies you get a word-processor, database and a spreadsheet, plus some other goodies such as comms software. Admittedly the standard of each of them is not the highest. Nonetheless this suite of software still represents excellent value for money. The packaging and documentation are good and the programs work in a menu environment. Worth looking up if you're short of pennies.

Contacts

Amsoft, 0277 230222
Brentwood House, 169 Kings Road, Brentwood, Essex CM14 4EF.

Arnor, 01 684 8009
Protext House, Wainman Road, Peterborough PE2 0BU.

Audiogenic, 0734 303663
12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

Beebugsoft, 0727 40303
Dolphin Place, Holywell Hill, St. Albans, Herts AL1 1EX.

Brunning Software, 0245 252854
34 Helston Road, Chelmsford, Essex, CM1 5JF.

Campbell Systems, 0378 77762
7 Station Road, Epping, Essex CM16 4HA.

Cumana, 0483 571666

Database Software, 0625 879940
Europa House, Adlington, Macclesfield, Cheshire SK10 5NP.

Discovery/Gremlin Graphics, 0742 753423
Alpha House, 10 Carver Street, Sheffield S1 4FS.

Logotron, 0223 323656

Minerva Systems, 0392 37756
69 Sidwell Street, Exeter, Devon, EX4 6PH.

NewStar Software, 0277 229509, 0277 220573
200 North Service Road, Brentwood, Essex CM14 4SG.

Rational Solutions, 056681 511
Carn House, Canworthy Water, Nr. Launceston, Cornwall PL15 8UB.

Tasman Software, 0532 438301
Springfield House, Hyde Terrace, Leeds LS2 9LN.

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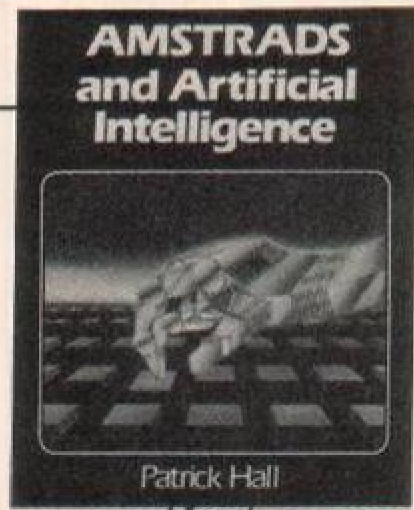
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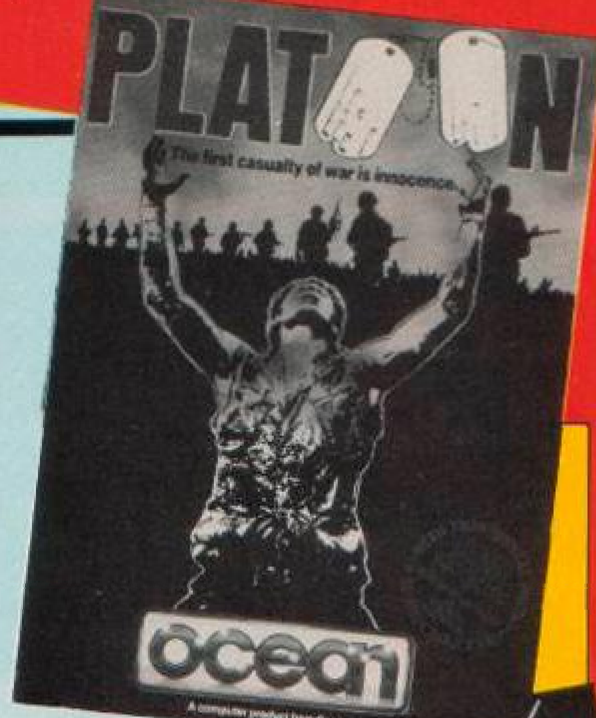
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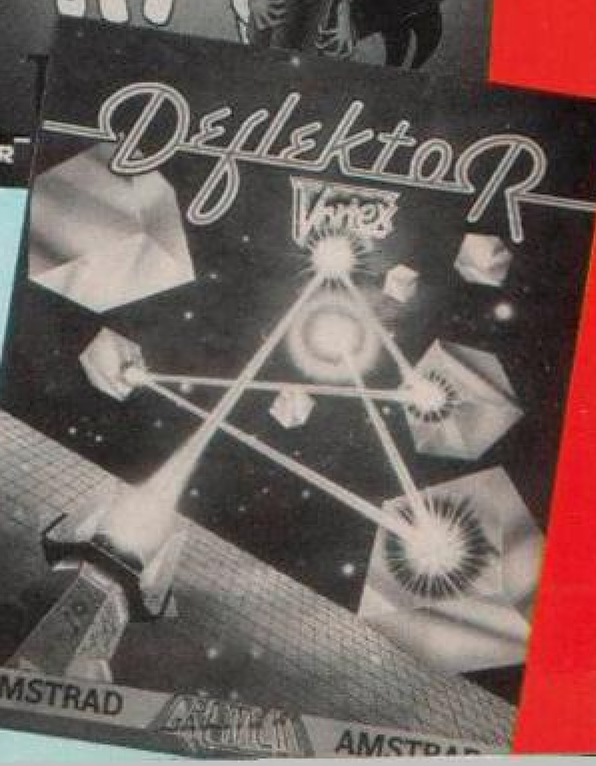
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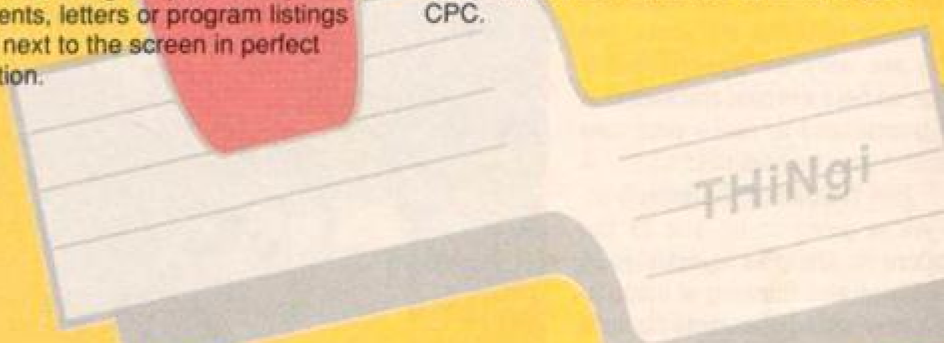
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REAR VIEW

A sideways look at the world of computing, plus Sugarman!





Photo-mania

It has been a most extraordinary month for dreadful PR shots. We don't see why we have to suffer alone, so here are four crackers that are guaranteed to make your toes curl and your hair fall out.

Just to cushion the blow a little we're going to let you fit the captions to the photographs yourself. We're also thinking of instigating a new series of awards for such photographs. Starting with "Best creative use of false facial hair." Looks like we've got three entries for that one already.





1. "I didn't think this is what you meant by a simultaneous four-player game."

2. A rare shot of a David Bellamy look-a-like slipping into a Bonnie Langford impression.

3. "That jelly mould really suits you, but I'm not so sure about the astroturf on your lip."

4. "Hey Bigwig, I don't remember any samurai warriors in Watership Down."

SUGARMAN



Horoscope

AA's monthly honest horoscope for CPC users



Gemini (May 21-June 20)

We're sorry to have to report that our astrologer, who coincidently was a Gemini, failed to predict a number 62 bus coming quickly round a sharp corner. In view of this we reckon his horoscopes were obviously dreadfully inaccurate and have decided to discontinue them. Watch out next month for Basil the soothsaying Budgie and his predictions on royal family pregnancies, test match scores and the next simulator from Codemasters.

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JAIL BREAK
It's every prison warden's nightmare — the inmates have broken out. These men are hardened criminals, armed to the hilt and aren't afraid to gun you all down. Just move in, knock 'em down and round 'em up. Easy!
GREEN BERET
RESCUE THE CAPTIVES! You are a highly trained combat machine. Your mission: infiltrate all four enemy Strategic Defence Installations – alone, against immeasurable odds.
Eight more deadly opponents to combat as you advance to become a black-belt master. Authentic fighting moves with 4 different locations.
Konami
Shao-Lin's Road
Our hero has finally mastered the secret martial art "CHIN'S SHAO-LIN" but is trapped by triad gangs. With kicks and other secret powers, escape from and travel SHAO-LIN'S road to freedom!
NEMESIS
The planet Nemesis, is now under an all-out space attack beings from the sub-space star cluster of Bacterion. You will need all your courage and concentration to win. Get ready to blast off!
HYPER SPORTS
Continuing the challenge where 'TRACK and FIELD' left off. Archery, Skeet Shooting and Weight Lifting are just some of the featured events to test your skill and stamina.
You can almost feel the tension of the big match breaking through the screen . . . the expectant crowd is almost on top of you! You return the service with a Top-spin Backhand, then a Forehand Back-spin, the ball bounces high from your opponent's looping, defensive lob . . . SMASH! . . . a great shot opens the score . . .
PING PONG
JACKAL
KONAMI
Get into this and you'll never get out . . . The plan – codename JACKAL – is to drop a squad of 4 crack troops behind enemy lines. Rescue a group of prisoners and whilst under attack, deliver them to helipads. Their final objective is to knockout enemy headquarters. Simple eh?
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